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ABSTRACT

This document is a compilation of completed research in the areas of health, physical education, recreation and allied areas for the year 1964. It is arranged in three parts. Part I consists of an index showing cross references for all of the listings in parts II and III. Part II consists of a bibliography, listing published research and the periodicals reviewed. Part III consists of abstracts of unpublished masters and doctoral theses for thirty-eight graduate programs of health, physical education, recreation and allied areas. There is a total of 491 bibliographical references to the journals and 466 references to masters and doctoral theses. Abstracts are provided for a majority of the theses. (HB)

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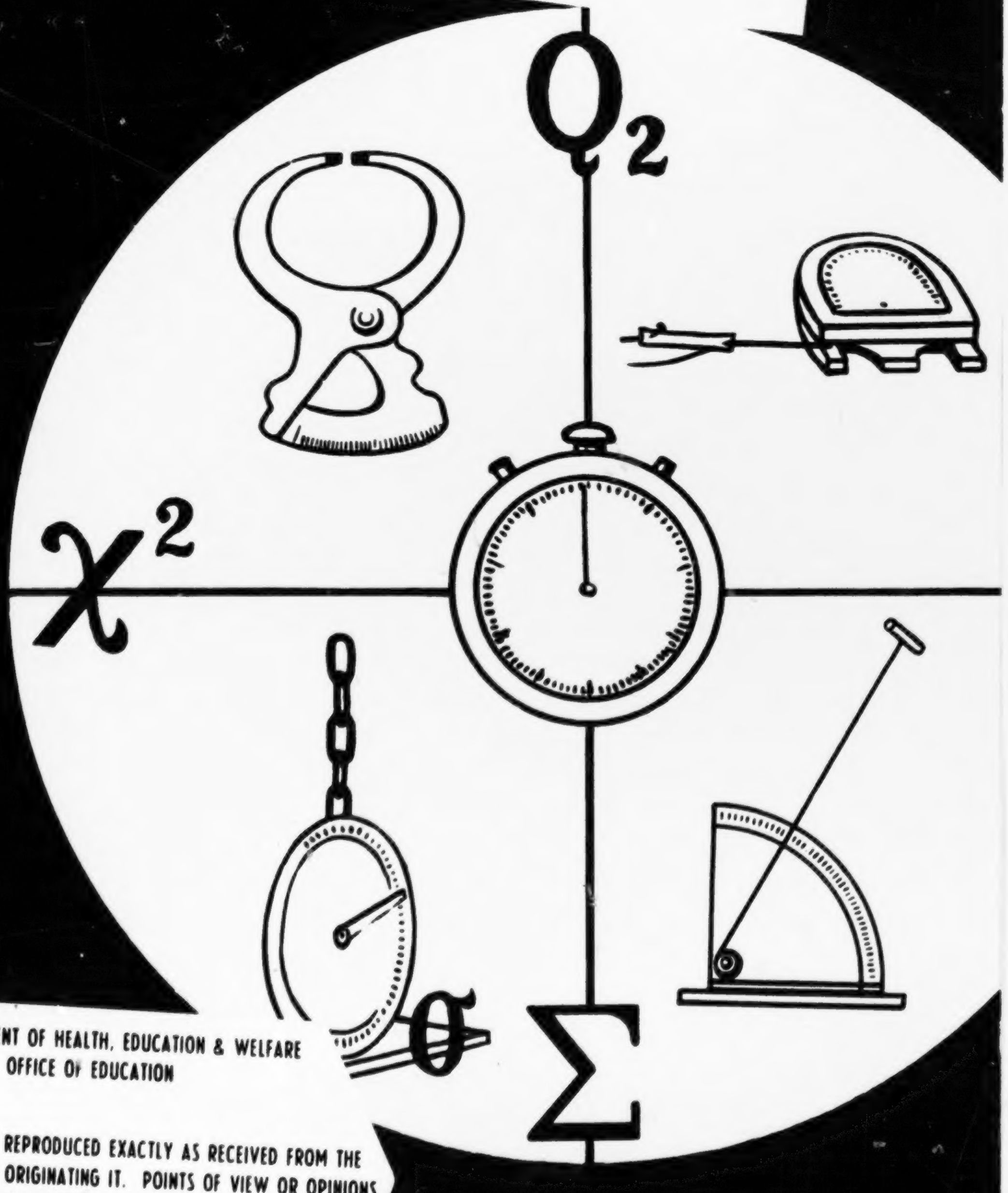

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in Health, Physical Education, and Recreation

INCLUDING INTERNATIONAL SOURCES

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in Health, Physical Education, and Recreation
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Volume 7 1965 EDITION

covering research completed in 1964

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for the RESEARCH COUNCIL of the AMERICAN ASSOCIATION
FOR HEALTH, PHYSICAL EDUCATION, AND RECREATION,
a department of the National Education Association

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INTRODUCTION

This compilation lists research completed in the areas of health, physical education, recreation, and allied areas during 1964. It is arranged in three parts:

I. Index. In this section, cross references are given for all the listings in Parts II and III. References are arranged under the subject headings, which are in alphabetical order. Instructions for using the index are given at the top of page 1.

II. Bibliography. This is a listing of published research, citing articles published in 98 of the 168 periodicals reviewed by the Committee for Completed Research. The periodicals reviewed are listed on pages 117 and 118.

III. Unpublished Masters' and Doctors' Theses for 38 graduate programs of health, physical education, recreation, and allied areas. Institutions reporting are listed on page 119. Most references are accompanied by abstracts of the research and all are numbered in alphabetical order. Names of institutional representatives sending in these abstracts are indicated in parentheses after the name of the institution.

Theses abstracts are sent in by the institutional representatives, and are then organized, indexed, and edited by the chairmen of the Committee for Completed Research. Universities and colleges are encouraged to submit abstracts of theses completed at their institutions in the year 1965 for inclusion in the next issue of Completed Research. Material should be sent to the chairmen of the Committee on Completed Research.

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THE RESEARCH COUNCIL's purpose is to stimulate research in health, physical education, and recreation and to advance knowledge in these special fields.

It is a section of the General Division of AAHPER and elects its president, secretary-treasurer, and a member-at-large to AAHPER's Representative Assembly. Standing committees are appointed to take charge of the Council's many projects; a chairman has administrative responsibility for each.

Unlike most sections of AAHPER, the Research Council elects its members and periodically reviews each member's activities. Only professional members of AAHPER who have published research, reported research at professional meetings, and regularly attend research meetings are eligible for membership. Those members who do not remain active are dropped.

The Council sets no limits to its size; Any member of AAHPER who meets the eligibility requirements may be elected to the Council. A membership committee annually combs the fields for eligible persons, and often persons apply for membership. Yet the present membership stands at around 100 persons, a number probably close to the potential. Admittedly, the Council is exclusive, but not for the purpose of self-aggrandizement. Strict qualifications are necessary if members are to perform the activities of the Research Council. Without the technical skill and research ability of present members, Council projects would never be completed or would be inferior. Because the members of the Research Council are highly trained in their fields of specialization and in research, they can give valuable service to the profession and to AAHPER:

- Initiate cooperative effort for research along strategic lines
- Develop long-range research plans on problems vital to the advancement of the field as a science
- Prepare and disseminate materials to aid research workers
- Sponsor the Research Quarterly
- Represent the Association in cooperative relations with other research organizations
- Provide advice to other divisions of AAHPER

PART I - INDEX

This Index enables the reader to refer to the items of completed research listed in Parts II and III. Research topics are arranged in alphabetical order. The reference numbers following each topic correspond to the listings of completed research dealing with that topic. The capital letter B indicates a reference to be found in the Bibliography (Part II); the capital letter T indicates a reference to be found in the Theses Abstracts (Part III).

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PART III - THESES ABSTRACTS

University of Alberta, Edmonton, Alberta, Canada (M. L. Howell)

1. BAKOGEORGE, Andrew Peter. The Relationship of Selected Anthropometrical and Physiological Variables to the Balke Treadmill Test and Terminal Step Test and Test Interrelationship. M.S. 1964. 144 p. (M. L. Howell, R. B. J. Macnab)

The performance times in the Balke Treadmill Test and the Terminal Step Test correlated .78 in one sample and .89 in a second sample. The step test accounted for about 60 percent of the variance in the treadmill test but adding other measures did not improve the prediction materially. Pre-exercise heart rates showed low but significant correlation with performance times. Exercise heart rates showed significant correlation with performance times and the correlation increased progressively with the time at which the heart rate was taken. Neither post-exercise rates or strength measures were significantly correlated with performance times.

2. BAYCROFT, Gerald H. An Evaluation of the Modified Astrand-Rhyming Nomogram as an Estimator of Maximal Oxygen Consumption. M.S. 1964. 80 p. (R. B. J. Macnab)

Data from 40 subjects indicated that the means for the Modified Astrand-Rhyming Nomogram and the Mitchell, Sproule, and Chapman Maximal Oxygen Intake Test were statistically equivalent and significantly higher than mean values for the Modified Astrand Bicycle Ergometer Test of Maximal Oxygen Uptake even though the Nomogram produced significantly greater variance. The intercorrelations between the tests and ability of one test to predict values for the others were essentially equal. Physical fitness as measured by the Johnson, Brouha, and Darling Test was predicted as well by the Nomograph as by the Modified Ergometer test and significantly better than by the Mitchell, Sproule, and Chapman test.

3. FOURNIER, Lionel J. A Survey of Recreation Components Operating in Selected Areas of Alberta. M.A. 1964. 155 p. (W. D. Smith)

Leadership, finance, facilities, and programs for amateur sport, games, and other recreational activities in Alberta were surveyed. Municipal authorities and recreation board members were poorly oriented toward the powers of a recreation board. A lack of qualified leadership was a major problem in all areas of recreation and the lack was especially acute for qualified physical education teachers at the elementary school level, female teachers in general, and physical education specialists in rural areas. The financial deliberations of municipal governments and sports governing bodies revolved around government grants and, although a lack of facilities for established programs was expressed, existing facilities had little or no use. Residents had a wide variety of interests which were oriented primarily toward physical recreation. Adult encouragement of youth programs was expressed largely through service clubs. A publicity campaign to acquaint the population with the available recreation resources was needed.

4. GLASSFORD, Robert Gerald. A Comparison of Maximal Oxygen Consumption Values as Determined by Predicted and Actual Techniques. M.A. 1964. 106 p. (R. B. J. Macnab)

The treadmill tests (Mitchell, Sproule, and Chapman Maximal Oxygen Intake Test and the Taylor, Buskirk, and Henschel Treadmill Test of Work Capacity) and the predictive test (Modified Astrand-Rhyming Nomogram for the Prediction of Maximal Oxygen Uptake) yielded higher maximal oxygen consumption values than the Modified Astrand Bicycle Ergometer Test. The correlation coefficients between the Astrand-Rhyming Nomogram Test and the other four tests were not significantly different from the correlations between the maximal tests of oxygen consumption and the fitness score. The Astrand-Rhyming test produced a significantly larger variance than any of the three direct tests of maximal oxygen consumption. The present methods of establishing maximal oxygen consumption values on the two treadmill tests did not necessarily provide a maximal estimation of this ability for all of the 24 subjects.

5. WATSON, Ronald Carl. The Cardiorespiratory Effects of Ice Hockey Upon Treadmill Performance. M.S. 1964. 67 p. (R. B. J. Macnab)

Ten varsity hockey players and 10 undergraduate and graduate students were tested over a 21-week period, corresponding to the beginning, middle, and end of the hockey season. The season of ice hockey significantly increased the maximal oxygen consumption of the hockey group over that of the control group when expressed in terms of liters/minute, but not in terms of ml/kg/minute. The maximal heart rates of both groups decreased significantly over the 21-week period but the difference between the two groups was not significant. The ice hockey group exhibited no significant superiority over the control group in submaximal oxygen consumption at the 0 percent grade, was significantly higher at the 2.5 percent grade in liters/minute but not ml/kg/minute, and showed a significant increase in oxygen consumption between the trials at the 5.0 percent grade.

6. WILLIAMSON, Kenneth Roy. Quantitative Strength Changes Resulting from Varied Isometric Contractions. M.A. 1964. 69 p. (M. L. Howell)

One hundred grade 10 boys were assigned randomly to a control group or to groups that trained daily with 1, 10, or 20 maximal 6-sec. isometric contractions. The subjects trained on a modified quadriceps table and were tested with cable-tension techniques as described by Clarke. The three exercise groups improved significantly in isometric strength of the knee extensors but the differences between groups were not statistically significant. These findings contradicted those of Petersen in Scandinavia and the reasons for the discrepancy were explained.

Arkansas State College, State College, Arkansas (L. J. Dowell)

7. BUCY, Jesse. A Comparison of the Effect of Three Methods of Training on Physical Fitness. M.S. in Education. 1964. 57 p. (L. J. Dowell)

Three groups, each of 17 male students at Rector High School, were matched on AAHPER Physical Fitness Test Scores, age, height, weight, and strength. Groups were assigned by chance to 11-week exercise programs in addition to regular physical education classes three times a week. The isometric exercise group used eight exercises requiring 9 min. per day 5 days a week. The calisthenics group had nine exercises 9 min. a day 3 days a week. Comparisons within groups by t at the .05 level showed that all groups improved significantly in physical fitness, strength, and weight. The isometric exercise group had significantly greater strength on the post-test than the calisthenic exercise group.

8. FLOYD, Don Stanley. A National Survey of Requirements for Physical Education Teachers. M. S. in Education. 1964. 59 p. (L. J. Dowell)

Certification requirements were obtained from the 50 state departments of education. Bulletins or catalogs were obtained from the 50 state universities and from 47 state colleges plus 3 other colleges where the state college did not have a major or minor in physical education. A majority of larger universities offered separate majors in physical education, health education, and recreation with some emphasizing one area more than another. University and college requirements exceeded the state certification requirements and state colleges tended to pattern their curriculums after that of their university but to have broader curriculums with equal amounts of health, recreation, professional physical education, activity, and professional athletic courses. A majority of schools counted varsity athletics as satisfying the activity requirement. Activity emphasis depended partly on geographical location. Adjacent states tended to have similar requirements. The requirements at Arkansas State College were above average for colleges.

9. ROEBUCK, Wilbur Gene. A Comparative Study of the Intelligence Quotient and Academic Achievement of Athletes and Nonathletes. M. S. in Education. 1964. 38 p. (L. J. Dowell)

Senior male athletes (115) at Jonesboro High School were compared with senior nonathletes in graduating classes since 1959 on the basis of school records using t at the .01 level. Athletes had higher IQ's and grades than nonathletes. The grades of athletes in relation to mental ability were as high or higher than nonathletes. The grades of football lettermen were not significantly different in-season and out-of-season from 1960 to 1964.

10. SMALLWOOD, Frances S. A History of Physical Education at Arkansas State College. M. S. in Education. 1964. 80 p. (L. J. Dowell)

Material was collected from college catalogues, yearbooks, official records, press releases, WAA handbooks, unpublished materials, college newspaper files, and personal interviews. The program was limited because faculty members had many duties in other departments and the athletic program was emphasized until 1961 when the athletic and physical education departments were separated and physical education had its own gymnasium and other space for its programs. The departmental staff has grown in number and professional preparation since World War II. The program has tended to follow national trends and improve with the increase in better qualified personnel. Over the years the department has sponsored numerous clubs and extracurricular activities, both for majors and the entire student body. The general incompleteness and inaccessibility of records indicated that special effort should be made to collect and preserve records.

University of Arkansas, Fayetteville, Arkansas (H. B. Falls)

11. BAKER, William B. An Evaluation of Undergraduate Professional Preparation in Physical Education for Men in Seven State-Supported Institutions of Higher Learning in Arkansas. Ed. D. 1962. 152 p. (E. T. Hendricks)

The instrument used to evaluate the programs was devised by the Northwest Council on Teacher Education Standards for Health, Physical Education, and Recreation. General recommendations were to improve recreational programs; increase the credit hours for anatomy, physiology, and kinesiology; include a course in adapted physical education; improve guidance and student personnel programs; and add combative activities equipment and movement equipment. More doctoral-level faculty were needed.

12. CAIN, Billy Jean. The Relationship Between Participants and Non-Participants in Intramural Sports for Women at the University of Arkansas as Related to Physical Fitness and Certain Psychological and Sociological Factors. M. Ed. 1963. 49 p. (G. C. Moore)
The significant differences in favor of the participants were better physical fitness, better adjustment in the area of health, and greater leadership ability.

13. COKER, Homer L. Selected Pre-Activity Calisthenics Programs and Effects Upon the Physical Fitness of the College Male. Ed. D. 1964. 79 p. (E. T. Hendricks)
The members of a touch football class meeting 2 days a week for 6 weeks were divided into four groups. Three of the groups engaged in different calisthenic programs at the beginning of class each day. The fourth group was a control. The calisthenic programs were a variation of the Army dozen, Steinhaus' program from the booklet, How To Keep Fit and Like It, and the speed-exercise program of Lyle and McCraw, Journal of Health, Physical Education, Recreation, December 1962. The effects were measured by a 4-item battery consisting of 2-min. sit-ups, pull-ups, 60-sec. squat thrusts, and a 300-yd. shuttle run. None of the programs improved fitness significantly and there were no significant differences among them.

14. DAVION, Violet M. Physical Education Opportunities for the Physically Handicapped Pupils in the Public Senior High Schools of Louisiana. Ed. D. 1964. 98 p. (E. T. Hendricks)
The number of physically handicapped students, their means of meeting the physical education requirements, and the bases upon which physical education opportunities were offered to them were determined from a proportional sampling of 164 of the state's 530 schools by means of a closed form questionnaire. Ninety-five percent of the questionnaires were returned. Approximately 50 percent of the schools met the physical education requirement for handicapped students by modifications in the regular physical education class. About 40 percent substituted activities such as other classes, office duties, odd jobs, and observation of the regular physical education class. Only 10 percent of the schools provided special classes.

15. FARRELL, Leonard L. An Analysis of the Problems of High School Coaches. Ed. D. 1963. 210 p. (E. T. Hendricks)
A stratified random sample of high school basketball coaches in Kansas was selected. Data concerning their professional preparation, coaching experience, and coaching problems were collected with a questionnaire. The coaches were classified into 10 categories based on professional preparation and experience. The most common and difficult problems concerned team personnel, equipment, facilities, and officials. The problems varied considerably according to playing experience, number of classes taught, size of community, and professional preparation. There was little variation in the problems related to years of coaching, the college attended, or the number of assistants.

16. FARRIS, Jefferson D. The Relationship of Selected Factors to the Health Knowledge of Entering College Freshmen. Ed. D. 1964. 73 p. (E. T. Hendricks)
The factors studied were: sex, age, size of school district attended,

area of residence in the state, parent occupation, amount of secondary school health education instruction, amount of secondary school physical education instruction, amount of periodical literature regularly received in the home, and the mental ability of the student. The sample included all entering freshmen at Arkansas State Teachers College in the fall semester of 1963—194 men and 228 women. The health knowledge test was the Dearborn College Health Knowledge Test. The multiple correlation coefficient obtained between the criterion and the independent variables was .71. The most important variables were mental ability, sex, and amount of secondary school health instruction.

17. FRANKS, Burleigh D. The Effects of Calisthenics on Physical Fitness Status and Skill in a High School Volleyball Class. M. Ed. 1961. 70 p. (G. C. Moore)

The study sought to determine the effects of varying amounts of calisthenics and volleyball in three high school male service classes on the physical fitness and general volleyball skill of the participants. The AAHPER Youth Fitness Test was used to measure physical fitness. A serve test and wall volley were used to measure volleyball skill. The three groups were: volleyball plus calisthenics, conditioning activities only, and volleyball only. No significant difference was found between the combination group and the conditioning group on physical fitness, or between the combination group and the volleyball group on volleyball skills.

18. HELVEY, Omer J. The Effects of Isometric, Isotonic, and Sports Programs on Physical Fitness. Ed. D. 1965. 121 p. (G. C. Moore)

The subjects were 127 male college freshmen: 42 were in a sports program, 41 in an isometric exercise program, and 41 in an isotonic exercise program. The AAHPER Youth Fitness Test was administered before and after the 8-week programs. All three programs improved physical fitness. Certain aspects of physical fitness were affected more by one type program than another.

19. HOLLAND, Kenneth A. The Predictive Value of Selected Variables in Determining the Ability to Play Basketball in Small High Schools. Ed. D. 1963. 70 p. (E. T. Hendricks)

Measures included speed, agility, upper-arm strength, power, ball-handling ability, reaction time, shooting ability, passing ability, height, weight, age, and previous experience. The criterion was the rating of the basketball playing ability of each squad member by his coach. The most important variables were experience, ball-handling ability, passing ability, and shooting ability. The weighted index with R = .76 was: basketball ability score = (1.54); number of years experience + (1.23); score on speed dribble + (.26); score on wall volley + (.15); score on shooting test - 10.11.

20. KOLDUS, John J. III. An Appraisal of the Secondary School Physical Education Programs in Arkansas. Ed. D. 1964. 126 p. (E. T. Hendricks)

The sample consisted of all 459 white secondary schools and 30 percent of the 140 Negro secondary schools. A detailed questionnaire was devised and distributed to the schools. Questionnaires were returned by 304 schools (61 percent). The results were evaluated against the consensus of experts as taken from the literature. Conclusions were presented under five headings: administration, program, facilities, equipment and supplies, and generalizations.

21. STANLEY, William E. The Effects of Calisthenics and Game

Type Programs on the Physical Fitness of Elementary School Children. Ed. D. 1963. 80 p. (E. T. Hendricks)
This study compared the effects of three exercise and developmental activities, exercises and games, and games only on physical fitness as measured by the AAHPER Youth Fitness Test. The experimental groups included 215 boys and 182 girls from the fifth and sixth grades. Three grade 5 and two grade 6 classes were used as a control group. The experimental programs lasted two months. A program of exercises plus developmental activities produced superior gains in sit-ups, pull-ups, and the standing broad jump. A program of exercises and games resulted in improved performances in the 50-yd. dash and the shuttle run. A program of games only produced superior performances in the softball throw for distance and the 600-yd. walk-run. All three programs produced significant improvement.

22. WARD, James E. The Relationship Between Physical Fitness and Certain Psychological, Sociological, and Physiological Factors in Junior High School Boys. Ed. D. 1962. 123 p. (E. T. Hendricks)
The AAHPER Youth Fitness Test was given to 784 junior high school boys. Boys scoring at or above the 85th percentile were designated as "fit" and those scoring at or below the 35th percentile were designated as "unfit." The two groups were compared as to: intelligence as measured by the Otis Quick-Scoring Test of Mental Ability, academic achievement, social efficiency as measured by the Blanchard Behavior Rating Scale, acceptance by peers as measured by the Cowell Personal Distance Ballot, school attendance, overweight or underweight. The "fit" averaged higher in mental ability, were more accepted by their peers, tended to possess a higher degree of social efficiency, missed fewer days of school, drove automobiles more frequently, participated more in sports, tended to have more dates, joined more out-of-school organizations, held more leadership positions, and tended to be slightly underweight.

Brigham Young University, Provo, Utah

(D. D. Geddes and L. Holbrook)

23. BANGERTER, Blauer L. Contributive Components in the Vertical Jump. Ph. D. in Physical Education. 1964. 125 p. (N. P. Neilson)
The problem was to determine what relative contribution each of the three components of the lower extremities made to the vertical jump. A jump reach form of the vertical jump with a reliability coefficient of .925 was used as the criterion. Tensiometer measurements of the three components of the leg in isolation and weekly work loads for progressive resistance exercise programs were used to validate strength gains.

24. BARKER, Ruel M. The Relationship of Foot Leverage and Vertical Jumping Ability. M. S. in Physical Education. 1964. 79 p. (M. F. Hartvigsen)
A line from the anterior border of the styloid process of the fibula was projected through the lateral malleolus. The perpendicular distance from this line to the anterior border of the most prominent toe was considered the front section of the foot and the distance to the posterior border of the calcaneous was considered the back section. Vertical jumping ability was correlated with overall foot length, length of the front section, length of the back section, and the front to back section ratio.

25. BECK, Douglas J. The Difference Between High Top and Low Cut Basketball Shoes in Defensive Footwork. 1964. 31 p. (H. W. Soffe)

Basketball players were compared on ability to run a defensive footwork drill while wearing low cut and high top shoes. Performance with each type of shoe was also correlated with age, height, and weight.

26. BRANHAM, Robert Marion. Evaluation of the Physical Education Programs in the Elementary Schools of the Provo City School System. 1964. 52 p. (D. D. Geddes)

School programs were compared with each other and with the average for the school system. Specific strengths and weaknesses in each school were determined and recommendations which might prove helpful were presented.

27. DALLING, Glenn W. The Relationship of the Length of the Foot to Performance in the Vertical Jump. 1964. 53 p. (D. D. Geddes)

This study was conducted to determine the relationship of foot length to the performance in the vertical jump; foot length as a percentage of height to the performance of the vertical jump; foot length as a percentage of total leg length to the performance in the vertical jump; and foot length as a percentage of lower leg length to performance in the vertical jump. Forty-three men from three physical education classes at Ricks College served as subjects for this study. Subjects were selected, conditioned, measured, and the vertical jump test was administered.

28. DURRANT, Earlene. A Comparative Study of Physical Fitness of College Women Physical Education Majors and College Women Enrolled in Service Classes at Brigham Young University. M.S. in Physical Education. 1963. 58 p. (L. Holbrook)

After 7 weeks of similar classes, the Rogers' Strength Test and National Section on Women's Athletics Test were given to 42 college women in service courses and 42 women majors during the eighth week. The Scott Motor Ability Test was given during the tenth week. The means for both groups on the athletics and motor ability tests were above the norms. The differences between groups for strength and motor ability were not significantly different but the majors were significantly superior in motor fitness as determined by the Athletics Test.

29. FAIRBANKS, Bert L. Dietary Misconceptions in Athletics. 1963. 124 p. (D. D. Geddes)

Coaches, trainers, and athletes have for many years been experimenting with foods in an effort to discover which foods will help the athlete give his best performance. The present study determined the prevalence of dietary misconceptions among Utah high school coaches by comparing their conceptions with those of experts in nutrition and athletic training.

30. FREEMAN, Lloyd Mason. The Effectiveness of Brigham Young University's Undergraduate Physical Education Program as Evaluated by Graduates. 1964. 75 p. (E. Roundy)

The purpose was to evaluate the physical education curriculum by obtaining the opinions of recent graduates on the value of each course in their teaching experience, the adequacy of class time devoted to each course, and the quality of instruction in each course. The participants were graduates from the years 1958 through 1963. Seventy-six (43.4 percent) returned usable questionnaires.

31. HILL, Jack E. Components of Plantar Flexion in the Vertical Jump. 1963. 48 p. (B. Bangerter)

This study investigated the relationship of strengthening the plantar flexor muscles, by exercising with the knees extended or with the knees flexed at 90°, and the effect of this increased strength on a vertical jump test.

32. McGOWN, Carl Michael. Throwing Ability and Certain Selected Anthropometric Measurements of the Arm. 1964. 39 p. (D. D. Geddes)
Ability to throw a baseball for distance was correlated with age and weight, with grip, wrist, and shoulder medial rotation strength, and with the length of the hand, lower arm, and upper arm as a proportion of total arm length.

33. REID, Jack L. A Study of Basketball Field Goal Attempts in Certain High School Games to Determine the Relative Accuracy of Different Kinds of Shots from Various Areas and Distances from the Goal. 1963. 71 p. (D. D. Geddes)
The following aspects were investigated: types of shots, areas and distances of field goal attempts, relation of shot types to areas, possible neglected shooting areas, and the best types of shots in various areas and at various distances.

34. RIGBY, Gloria M. Swimming for the Blind. M.S. in Physical Education. 1964. 87 p. (L. Holbrook)
A guide covering special facilities, equipment, teaching aids, and skill progression for blind and otherwise handicapped children was developed through library research and correspondence. The materials and teaching suggestions were tested in 12 lessons for three blind children.

35. SAVAGE, David Earl. The Comparative Effects of a Beginning Boxing Class and a Beginning Handball Class on Physical Fitness. 1963. 47 p. (H. W. Soffe)
Physical fitness tests were administered before and after participation in a beginning boxing class and a beginning handball class to determine whether classes held twice a week improved physical condition, which program developed greater strength, and which program developed greater cardiovascular endurance.

36. SCHLAPPI, Larry R. The Effect of Inclined Spikes upon Broad Jumping. 1964. 43 p. (R. Jones)
Performances with inclined spikes and regular spikes were compared to determine whether inclined spikes were better in general, for certain types of jumpers, or under certain conditions.

37. SEELY, Doyle G. An Inventory of Motivational Factors Among Selected All-American Football Players. 1963. 50 p. (H. W. Soffe)
The group was surveyed to determine the effect of family background, peer group, coaches, need for achievement, need for conquest, physical drives, etc.

38. VILLALOBOS, Margarita. Physical Fitness Test Scores and the School Physical Education Program: A Comparison of Test Scores with Evaluated Programs. M.A. in Physical Education. 1964. 43 p. (L. Holbrook)
The AAHPER Youth Fitness Test was administered to 750 junior high school girls at the beginning and end of the school year and the programs were rated with the Neilson Score Card. The school with the lowest t ratios between initial and final means for the fitness tests had the program with the most activities. The school with the highest t ratios had fewer activities than the school with the lowest t ratios but more activities than the school with the intermediate t ratios. Concentrating on activities for four weeks appeared more conducive to increasing fitness test scores than shorter or longer units.

University of British Columbia, Vancouver 8, British Columbia (S. R. Brown)

39. FIELD, Arthur E. J. A Reliability Analysis of the American Association for Health, Physical Education, and Recreation Youth Fitness Test Items. M.P.E. 1964. 69 p. (S. R. Brown)
Fifty-seven male university students did the AAHPER test four times in 4 weeks. An analysis of variance was prepared for each item. Fisher's t ratios and correlation coefficients were calculated for all possible combinations between trials. The results indicated the amount of practice necessary to raise the reliability of individual items to a satisfactory level. Standard errors of measurement were reported for each item.

40. SCOTT, Harvey Alexander. The Effect of Physical Conditioning on the Motor Fitness and Cardiovascular Condition of College Freshmen. M.P.E. 1964. 116 p. (S. R. Brown)
Fifteen male students in a required program physical conditioning class were tested before and after 8 weeks of training (2 half-hours of actual work a week). The mean differences in all cardiovascular and motor fitness items were either statistically not significant or of no biological (practical) importance. Students who started in fit condition became less fit; those who were unfit at the start improved considerably; the middle group made no changes.

41. SELDER, Dennis James. Anthropometric, Cardiovascular, and Motor Performance Characteristics of University Ice Hockey Players. M.P.E. 1964. 37 p. (S. R. Brown)
Characteristics of physique, motor, and cardiovascular fitness were reported for 14 varsity hockey players, some of whom represented Canada in the 1964 Winter Olympics. Most of the players were dominant mesomorphs with low adipose measurements; the majority were above average in dips and in dynamometrical strength but average or below in other tests of motor fitness. Cardiovascular test results were rated good to excellent. The test scores reflected the specific nature of hockey training done entirely on ice.

42. TAYLOR, Albert William. A Study of the Fitness Effects of Varsity Wrestling and Required Wrestling Training Programs. M.P.E. 1964. 111 p. (S. R. Brown)
Ten varsity wrestlers, after training 8 weeks for 5 2-hr. periods a week, showed significant improvements in tests of muscular endurance and cardiovascular condition plus some reduction of body fat. Twelve students in a required program wrestling class with 2 one-half hour periods a week for 8 weeks made significant improvements in several muscular endurance test items. Improvements in dynamometrical strength, cardiovascular condition, and body fat were not significant.

University of California, Berkeley 4, California (H. Eckert)

43. BLEISWEISS, Gail A. Relationship of Force Exerted on the Take-Off of the Standing Broad Jump to Strength, Weight, and Distance Jumped. M.A. in Physical Education. 1964. 22 p. (A. Espenschade)
Fifty-eight fourth grade boys and girls were measured with respect to total isometric leg extensor strength, vertical pressure exerted on a pressure plate during the performance of vertical and standing broad jumps, distance covered during the standing broad jump, height, and weight. Low, but significant, relationships ranging from .287 to .399 were found between vertical jump pressure and leg strength, height,

and the distance covered in the broad jump. The distance jumped correlations with strength and the strength/weight ratio were .377 and .422 respectively. The inverse relationship of -.647 between vertical pressures recorded during vertical and broad jumps supported the hypothesis that the trajectory of better performers in the standing broad jump tends to be more horizontal and less vertical than that of poor jumpers.

44. SEGAL, Esther F. Arm and Shoulder Girdle Strength of College Women. M. A. in Physical Education. 1964. 43 p. (A. Espenschade)
Fourteen arm and shoulder girdle performance measures, including pull-ups, hanging, push-ups, medicine ball push, and dynamometer and tensiometer strength measures, were administered to 28 college women. Regression equations for predicting each of the items on the basis of performance on the remaining items were in the order of .45 to .97 with eight of these being .80 or better. The hanging tests possessed the highest observable strength component among the performance tests and, of the four types administered, the Oregon test in the supinated hand position is recommended on the basis of greater comfort for the performer and the high intercorrelations (.81 to .90) between the hanging tests.

University of California, Los Angeles, California (R. A. Snyder)

45. ADAMS, Gary Lynn. The Effect of Eye Dominance on Baseball Batting. M.S. in Physical Education. 1964. 167 p. (C. Young)
Two college varsity baseball teams of fairly equal caliber were used as subjects. Handedness was determined from batting style and eyedness from special tests. The major group categories for comparison were crossed and unilaterals. These were subdivided as dextrals and sinistrals. The unilaterals were subdivided according to closed and open batting stance. Batting performance was compared in terms of strike-outs, called strike-outs, missed swings, bases on balls, batting average, and placement of hits. The results indicated that unilaterals were superior to crossed laterals in most batting categories and that unilaterals using an open stance generally outperformed those using a closed stance. Eye dominance apparently affected batting ability.

46. ANDERSON, David Frederick. The History of Physical Education in the City Schools of Winnipeg. M.S. in Physical Education. 1964. 68 p. (R. Snyder)
Chronological development indicated inconsistent interest and leadership by the government of Manitoba, a lack of degree or diploma courses at the University of Manitoba, and a lack of especially outdoor facilities for the Winnipeg schools. Continuing review of the position of physical education in the Province and City Schools seemed necessary.

47. ANDERSON, Gerald Lee. Significance of Laterality in Cervical Variances. M.S. in Physical Education. 1964. 51 p. (C. Young)
Hand and eye dominance, hip and eye elevation, dropped or forward shoulder, anterior and lateral cervical tilt, and whether or not glasses were worn were determined on 31 male subjects with the aid of a posture screen. Intercorrelations between all factors resulted in some correlations that were significant at the .05 level but none was high enough to indicate a direct relationship between posture and laterality.

48. BARNEA, Tiva. Effect of Balanced Development on Flexibility of the Shoulder Girdle. M.S. in Physical Education. 1964. 64 p. (W. Massey)

Balanced strength and flexibility in the flexors and extensors of the shoulder seemed desirable for efficient performance. Twenty-two women physical education majors at the University of California, Los Angeles, were tested for arm strength and flexibility. The weaker arm was trained three times a week for 4 weeks with specific isometric exercises. The strength of the trained arm increased and the range of motion in extension increased slightly but the correlations between strength and flexibility were not significant.

49. CYR, Jacques Marcel. Effect of Fencing on Reaction Time. M.S. in Physical Education. 1964. 42 p. (W. Massey)
Five reaction times for a visual and for an auditory stimulus were measured on 65 students of both sexes in beginning fencing and golf classes at the University of California, Los Angeles. Nineteen subjects were selected from each class to give two groups matched in mean and standard deviation. Subjects were retested after 8 weeks in their respective classes. The mean differences within and between groups were not statistically significant at the .05 level; neither fencing nor golf practice had a significant effect on reaction time.

50. DANFORTH, Susan Posey. Cinematographic Analysis of Clubhead Withdrawal in Golf. M.S. in Physical Education. 1964. 108 p. (J. Keogh)
The path of the clubhead was recorded with two 16mm cameras when the backswing was initiated and after 90° of backswing for one erratic golfer, and the distance and direction of the resulting drive was recorded. Backswings coupled with straight drives tended to be relatively invariable but backswings following this path were not consistently straight. Neither the initial path nor the path at 90° was consistently related to the various types of deviation in the drives.

51. CRADIC, Robert Keneth. Temperature Retention Following Strenuous Exercise. M.S. in Physical Education. 1964. 70 p. (C. Young)
The oral temperatures of 24 subjects were measured before, immediately after, and at 5-min. intervals for 30 min. after a standard 11-min. exercise on a variable speed treadmill. The mean temperature was subnormal immediately after exercise, perhaps because of the cooling effect of hard breathing. The only change that was significant at the .05 level was from 0 to 5 min. recovery but the maximum rise (1.36°F.) was at 15 min. recovery and the mean temperature at 30 min. was above normal. Trained subjects tended to show less rise than untrained subjects.

52. ELBAUM, Isabel. Body Image and Motor Development. M.S. in Physical Education. 1964. 63 p. (V. Hunt)
Boys and girls (N=30) from the University Elementary School, Los Angeles, between 6 and 7 years old and with Stanford Binet IQ's between 100 and 120 were given the Lincoln-Oseretsky Motor Development Scale (20-item) and the Draw-a-Person Test which was evaluated on the basis of global judgment. Correlations ranging from .84 to .93 and averaging .89 indicated a high relationship between motor development and body image at this age.

53. GOLDMAN, Leroy Howard. The Effect of Amount-Set Upon Learning. M.S. in Physical Education. 1964. 60 p. (V. Hunt)
Four equated groups, each of 11 male subjects were instructed that they would have 7, 11, 15, or "some" trials traversing an irregular maze blindfolded and guided by contacting the maze railings with the dorsal surface of the hands. All groups actually had 11 trials and traversal times were measured. Mean learning curves were constructed for each

group. Analyses of variance on trials 1, 4, 7, and 11 showed no significant differences between groups but one of six sign tests showed a significant effect of instruction on performance.

54. GURSEY, Tanis Steiman. Motor Performance of Boys With and Without Siblings. M. S. in Physical Education. 1964. 57 p. (J. Keogh)
Questionnaires were given to 47 Caucasian, 9-year-old boys in two Santa Monica schools to determine the number, age, and sex of siblings. Scores from a 30-yd. dash, standing broad jump, throw for distance, throw for accuracy, and 50-yd. hop were used separately and in terms of a total T score. Results from a beam walk and a beam balance test were highly skewed and the range on five of the other tests was too restricted to use. Groups were compared on the basis of whether subjects had or did not have siblings, whether the siblings were brothers or sisters, and whether the siblings were older or younger. Boys with older siblings were significantly superior in throwing for distance and accuracy. Otherwise, sibling structure had little apparent effect on the motor performance of 9-year-old boys.

55. HERMANN, John William. Analysis of Factors in Offensive Strategy. M. S. in Physical Education. 1964. 145 p. (C. Young)
Zone and man-to-man football passing defenses were analyzed on the basis of published reports, coaching clinic material, interviews, game films, scouting reports, and personal experience. Potentially effective passing maneuvers for use against variations of these basic defenses were evolved and tested during a football season. The results indicated that effective pass maneuvers could be used successfully against selected defenses.

56. HUTTON, Robert Stanley. Kinesthetic Aftereffect Produced by a Gross Action Pattern. M. S. in Physical Education. 1964. 46 p. (V. Hunt)
Three groups of 17 subjects each performed locomotor activity on the level before and after exposure to a 10° gradient for 1, 1.5, or 2 min. The number of subjects reporting kinesthetic aftereffects was significant at the .01 level regardless of the duration of exposure. The number reporting kinesthetic aftereffect was greatest (71 percent) in the group having 1.5 min. exposure but not significantly different from the other groups. Some tentative indications of a distance paradox with a possible relation to exposure time was noted.

57. KENNEDY, Sheila Ann. The Contribution of Recreation to Rehabilitation of Psychiatric Patients. M. S. in Physical Education. 1964. 191 p. (W. Massey)
An observation scale was formulated for assessing escape from routing, self-expression, self-approval, boundary between self and outer world, relation to others, in-group feeling aesthetic experiencing, freedom from compulsion, and tension release. Eight schizophrenic patients were observed in 9 to 16 hrs. of recreation activity over a 4-week period. Graphs of progress were related to rehabilitation evaluated by the professional staff. Support for the hypothesis that recreation experience contributed to rehabilitation was inferred from evidence of parallel progress.

58. LaMOTTE, Allan Lee. Physical Performance of Junior High School Boys Following a Reduced Physical Education Program. M. S. in Physical Education. 1964. 75 p. (C. Young)
During 1963, 86 boys in grade 7B were given the California Physical Performance Tests and the President's Council on Youth Fitness Tests during the sixteenth week of the spring semester after a 5-day per week

physical education program. A 3-day per week program was instituted in the fall semester and 164 boys in grade 7B were tested during the thirteenth week when they had had half the participation time. Both classes had a conditioning and sports program with no special preparation for the test items. Mean performances were consistently lower on all tests for the group having half the participation time and significantly lower at the .05 level for the jump and reach, pull-ups, push-ups, and sit-ups but not for the standing broad jump, squat thrusts, rope climb, shuttle run, and 660-yd. run-walk.

59. NORMAN, Joyce Lorraine. Individual Use of Movement Space and Creative Ability. M.S. in Physical Education. 1964. 43 p. (V. Hunt)
The Minnesota Tests of Creative Thinking were administered to 30 randomly selected children in grades 4 and 5. The children were observed individually once a week for 4 weeks and were scored on the range of movement space used in skipping, running, throwing, and kicking. The observation scale was found to be objective and the raters reliable. The correlation between range of movement and the index of creative ability was positive and significant at the .01 level. The implication that movement education might develop creative potential seemed worth further research.

60. SHERMAN, Eve Harriet. Consistency of Individual Movement. M.S. in Physical Education. 1964. 26 p. (V. Hunt)
A 7-category rating scale was used once a week for two weeks on 30 students in grades 4, 5, and 6 to assess the amount of space, time, and force they used while running, skipping, throwing, and kicking. Analysis indicated that the scale provided an objective basis for rating and that the ratings of first and second trials of the three factors within tasks were consistent. However, the mean ratings for the three factors when compared between tasks showed low consistency.

61. TAUL, Constance Paugh. Work Tolerance of Children with Cardiac Defects. M.S. in Physical Education. 1964. 83 p. (L. Morehouse)
A bicycle ergometer test of working capacity was administered to 11 children with cardiac defects who were in the regular school program. Heart rates before, during, and after performing activities commonly included in a physical education program for this age group were recorded by means of radio-electrocardiography. No indication was found that the degree of participation in a particular physical activity was predictable from the measured work capacity. The subjects attained heart rates over 170/min. during exercise with no apparent ill effect.

62. ZENO, Joseph Richard, Jr. The Incidence of Ankle Sprains and the Degree of Inversion Ankle Mobility. M.S. in Physical Education. 1964. 65 p. (C. Young)
Data were collected by questionnaire, interview, stress films, and clinical evaluation. Ankle mobility of uninjured ankles was measured and the subjects were classified as having high, medium, or low "talar tilt"—possible ankle inversion. The low talar tilt classification had a smaller percentage of subjects with injured ankles but the limited number of subjects prevented a firm conclusion that high ankle inversion mobility was associated with greater incidence of sprained ankles.

University of California, Santa Barbara, University, California (V. Skubic)

63. BARTHELS, Katherine M. A Comparison of the Performance of German and American Women on a Test for Cardiovascular Fitness. M. A. in Physical Education. 1964. 123 p. (V. Skubic)

64. FOSS, Charles R. Action of Wild and Albino Mice in Response to Forced Swimming. M. A. in Physical Education. 1964. 72 p. (S. Horvath)

65. PETERSON, Geraldine M. The Achievement in Physical Education of Girls in Daily Programs as Compared with Those in Alternate Day Programs in the Same School. M. A. in Physical Education. 1964. 100 p. (V. Skubic)

66. TUNNICLIFFE, Fred. An Analysis of the Influence of Recreational Therapy on Male Youths Age 14 to 21 Who Are Afflicted with Personality Trait and Pattern Disturbances. M. A. in Physical Education. 1964. 175 p. (W. Wilton).

67. VOLPI, Donald. The Effect of Rebound Tumbling on the Physical Fitness of College Women. M. A. in Physical Education. 1964. 78 p. (S. Horvath).

City College of New York, New York City

68. KAYE, Richard A. The Use of a Waist-Type Flotation Device as an Adjunct in Teaching Beginning Swimming Skills. M. S. in Health Education. 1964. 28 p. (S. Ostrow)

Thirty beginning swimmers were divided into two equated groups on the basis of a swimming test for distance administered during the second class session. The experimental group practiced and took the swimming test for distance, which terminated each practice session for both groups, with the flotation device. The final test was administered without flotation to both groups by an outside observer. The experimental group swam significantly farther. Pre- and post-tests of attitude showed positive attitudes toward swimming in both groups and no change after the experiment.

University of Colorado, Boulder, Colorado (E. Willis)

69. BEVACQUA, Yvonne Ann. A Comparison of the Influence of Two Club Progressions on the Ability of Beginning Golf Students to Hit a Golf Ball. M. S. in Physical Education. 1964. 117 p. (E. Willis)

Students in four beginning golf classes were taught with the progression from a wood club to a long, medium, and short irons and four other classes used the reverse progression. The subjects were tested in their ability to hit with the 8-iron, 5-iron, and 3-wood. The mean differences between groups were not significant.

70. GRAW, E. Esther. An Investigation of the Relative Effectiveness of Two Teaching Methods in the Development of the Ability of Beginning Tennis Players to Hit Oncoming Balls into Specified Areas. M.S. in Physical Education. 1964. 105 p. (E. Willis)

One beginning tennis class was taught by the traditional method and another beginning tennis class was taught by the volley method. All subjects were tested in their ability to drive and to volley after 5 weeks of instruction. No statistically significant difference between groups was found for either part of the drive test or for the forehand part of the volley test. The reliability of the backhand part of the volley test was too low for group comparison.

Eastern Illinois University, Charleston, Illinois (J. W. Masley)

71. CREEK, Ronald Eugene. The Effect of Overload Warm-up on the Accuracy of Throwing a Twelve-Inch Softball. M.S. in Ed. in Physical Education. 1964. 23 p. (R. A. Carey)

Seventy-four inexperienced softball players were randomly assigned to two groups: one group used a regulation softball for warm-up prior to throwing; the other used a weighted softball for warm-up. Accuracy of throwing was measured on 10 throws at a rectangular target. Warm-up with a weighted softball had an adverse effect upon accuracy, although with repeated tests this effect appeared to diminish, leading to the possible conclusion that inexperience in throwing a softball might be related to the adverse effect of overload warm-up.

Florida State University, Tallahassee, Florida (P. Everett)

72. BROWN, Elizabeth Jury. The Effect of Swimming on Tennis Ability. M.S. in Physical Education. 1964. 37 p. (M. Frances Hall)

73. COUSINS, Gerald F. A Comparison of Two Methods of Sampling Air Expired by Human Subjects under Exercise Conditions. M.S. in Physical Education. 1964. 73 p. (H. Campney)

74. GANGLOFF, F. J. A Cinematographical Analysis of the Sprint Relay Exchange. M.S. in Physical Education. 1964. 37 p. (K. Miller)

75. MARTIN, Thomas John. A Comparison of the Results of Isometric and Isotonic Conditioning Programs as They Pertain to Selected Components of Motor Ability. E.D. in Physical Education. 1964. 73 p. (P. Everett)

76. RAMSEY, Francis Henry, III. The Effects of Training on the Action Potential of Human Muscle. Ph.D. in Physical Education. 1964. 81 p. (P. Everett)

77. SIVASANKAR, Gandiga M. A Suggested Intramural Sports Program for Boys in the Secondary Schools of Mysore State, India. Ed.D. in Physical Education. 1964. 101 p. (P. Everett)

78. VINCENT, Marilyn Ford. The Influence of Selected Calisthenic Exercises upon Human Efficiency. Ph.D. in Physical Education. 1964. 148 p. (P. Everett)

University of Florida, Gainesville, Florida (W. H. Solley)

79. JACKSON, Donald L. The Relationship of Grip Strength and Lateral Wrist Strength to Skill in Golf. M.A. in Physical Education. 1964. 54 p. (W. H. Solley)

Grip and wrist strengths were measured over an 11-week period on 30 male students in required physical education golf classes meeting for one hour twice a week. The right and left grip and wrist strengths increased significantly. The correlations between initial or final skill and grip wrist strengths were not significant. Bilateral differences in grip and wrist strength were not correlated significantly with skill.

80. PATTON, Robert W. A Comparison of Two Endurance Training Techniques. M.A. in Physical Education. 1964. 57 p. (E. E. Phillips)
Three equated groups were formed from 20 white male subjects on the basis of four tests of work capacity. The work capacity tests were repeated after 8-week training programs consisting of either all-out, interval, or no training on a treadmill. Both experimental groups increased significantly more than the control group on the four tests of work capacity but the difference between experimental groups was not significant.

81. TAYLOR, Cecil J. Relationship Between Arterial $PaCO_2$, pH, and Heart Rate During Exercise. M.A. in Physical Education. 1964. 39 p. (E. E. Phillips)
$PaCO_2$ and pH changes during exercise were observed by obtaining blood samples at heart rates of 140, 160, and 180 per min. The Astrup Micro Method was used to determine $PaCO_2$, pH, and standard bicarbonate concentration. $PaCO_2$ showed a transient increase up to a heart rate of 140 and a progressive decrease throughout the remainder of the exercise period. The pH and standard bicarbonate concentration decreased continuously throughout the exercise.

82. WHIPP, Brian J. Cardio-Respiratory Adaptions to a Sustained Static Contraction. M.A. in Physical Education. 1964. 105 p. (E. E. Phillips)
Cardiorespiratory responses were measured on 29 subjects during an isometric, 100° squat to exhaustion. The maximum values from the static squat test were compared with maximum values obtained from 10 of the same subjects during a treadmill walk. The static exercise caused consistent increases in each of the variables; diastolic blood pressure increased to a magnitude not normally observed during dynamic exercise. Comparative data from the two types of exercise indicated that gross circulatory or respiratory insufficiency was not the limiting factors in the squat test. Local fatigue or pain appeared to cause cessation of work.

83. YARNALL, Garth E. The Significance of Lateral Direction, Initial Step, and Training to Lateral Total Body Movement Speeds. M.A. in Physical Education. 1964. 70 p. (W. H. Solley)
Total body movement times were measured from a visual stimulus to interrupting a light beam at 3 ft. and at 17 ft. with 14 junior high school athletes as subjects. After a one-week orientation, they were measured going 90° to the left and to the right and starting with either a "lead-out" or a "cross-over" initial step. The subjects underwent 4 weeks of daily training in lateral movement and were retested. The direction of movement had little influence on the relative speeds of movement with either method of starting. The "lead-out" initial step was more efficient to the right but both initial steps were equally efficient to the left before and after training. The lateral total body movement times did not change significantly after one month's training.

Fort Hays State College, Hays, Kansas (W. Kroll)

84. HARRIS, Merle. Analysis of Sports Skills of Male Freshmen at

Fort Hays Kansas State College (1960-1961). M.S. in Physical Education. 1961. 77 p. (W. Kroll)
Johnson's General Sports Skills Test was administered to 253 men. The Kansas sample was compared with Johnson's T score scale for ratings and was found to be significantly above average in general sports skills according to chi square at the .01 level. A contingency coefficient of .48 was found between high school sports experience and general sports skill classification. Although none of the group had ever had any experience in soccer, they scored at the 60th percentile for the soccer test item.

85. McCOLLOUGH, Jerry I. Methods of Assessing Child Growth. M.S. in Physical Education. 1961. 53 p. (W. Kroll)
A critical review of the literature was made on the available methods of assessing child growth in the elementary and secondary schools.

86. MORRIS, Harold H. The Effect of Order Upon a Selected Measure of Human Strength. M.S. in Physical Education. 1961. 68 p. (W. Kroll)
Thirty-one male subjects performed five isometric wrist flexion trials, spaced 1 min. apart, for three successive days. Analysis of variance revealed significant differences between strength on days 1 and 3 and between trials 1 and 3-4-5, 2 and 5. Possible causes for the effects were noted.

87. PALMER, Wendell L. An Evaluation of a Speed-A-Way Knowledge Test. M.S. in Physical Education. 1961. 101 p. (W. Kroll)
An analysis was made of a written examination on Speed-A-Way given to 279 women students enrolled in a fundamentals class. Item validity (Flannagan), item difficulty, and functioning of alternatives analyses were made. Considerable departure from a post-specified table of specifications for test content and actual test content was demonstrated.

88. RAY, Arthur L. Cross Transfer Effects of Isometric Strength Measurement Schedules. M.S. in Physical Education. 1962. 63 p. (W. Kroll)
Twenty-two male high school subjects were measured for isometric wrist flexion strength. Group A was measured daily for a week on the right wrist, then measured similarly on the left wrist. Group B reversed the order. Five trials spaced 1 min. apart were given on each occasion. No evidence of cross transfer was found for either group.

89. STRECK, Bonnie. An Analysis of the McDonald Soccer Skill Test as Applied to Junior High School Girls. M.S. in Physical Education. 1962. 75 p. (W. Kroll)
The McDonald Soccer Skill Test was administered to 265 junior high school girls. Local norms were constructed. Chi square for normality was significant (.05) indicating that the test was not able to discriminate between different levels of soccer ability at the junior high school level for girls. Evidence of trial effects was also noted.

90. WILLIAMS, Dale E. Cross Transfer Effects Utilizing a Unilateral Maximal Isometric Strength Measurement Schedule. M.S. in Physical Education. 1963. 74 p. (W. Kroll)
Two matched groups, each of 10 subjects, were given five trials daily of isometric wrist flexion. Group A was measured for five days on left hand, then five days on right hand. Group B reversed the sequence. Pretests for strength were followed by two weeks of inactivity before the experimental sessions began. No cross transfer or cross education occurred in either group.

George Peabody College for Teachers, Nashville 5, Tennessee (R. Pangle)

91. HOOKS, Edgar W., Jr. The Construction and Standardization of a Comprehensive Knowledge Test in Selected Physical Education Activities for College Men. Ed. D. in Physical Education. 1964. 397 p. (Ned Warren)

Preliminary multiple-choice tests with from 105 to 110 items each were prepared on badminton, softball, tennis, and volleyball and administered to 185 men in required classes at Campbell College. The tests were administered to another group of 185 men after item analysis and revision. The final tests, consisting of the best 50 items in each activity, were administered to men in required classes at 89 colleges and universities across the nation. Reliability coefficients by the split-half method and the Spearman-Brown Prophecy formula were .85 for badminton, .77 for softball, .81 for tennis, and .73 for volleyball. National percentile norms were based on 2,832 badminton, 3,513 softball, 2,740 tennis, and 4,140 volleyball scores. AAHPER District norms were established in each activity where analysis of variance indicated a significant difference between national and district scores.

Illinois State University, Normal, Illinois (E. L. Schurr)

92. DAVIS, Larry Dean. Effects of Isometric Contraction Exercises Upon Selected Physical Fitness Test Items. M.S. in Health and Physical Education. 1964. 127 p. (E. E. Stish)

Four physical fitness tests were administered to three groups of grade 7 and 8 students at Central Junior High School, East Peoria, Illinois, before and after a 9-week period during which experimental groups performed isometric exercises either four or two times a week and the control group had no organized exercises. Comparison of means within and between groups showed that no change was significant. Absence of organized exercise did not affect leg strength adversely.

93. DUTLER, David Christian. Anthropometric Strength and Performance Attitudes Among Good or Poor Vaulters. M.S. in Health and Physical Education. 1964. 134 p. (E. E. Stish)

Twenty junior and senior high school pole vaulters were divided into "good" and "poor" groups on the basis of their vaults when using a fiber glass pole. Twenty-seven attributes were measured or tested and 18 indexes were derived from the direct measures. The measures and indexes which were significantly larger at the .05 level for good vaulters were: tibial height, chest girth, shoulder girth, shoulder width, right grip strength, leg power and speed, iliospinal height/thigh length, and shoulder width plus shoulder girth/sitting height.

94. O'CONNOR, Martin Lanning. The Illio Conference. M.S. in Health and Physical Education. 1964. 69 p. (A. Gilett)

The Illio Conference was formed in 1945 with the member schools at Chillicothe, Dunlap, Eureka, Farmington, Metamora, Morton, Tremont, and Washington. Data were collected from published material in the Peoria Journal Star, Pekin Times, and Metamora Herald and from questionnaires to past and present principals and athletic directors at the schools. The strengths of the conference were: progression from one to six sports, comparatively equal size (except for Tremont), proximity of schools, and lack of dominance by any one school. The weaknesses and criticisms were: disparity in school size caused a decrease in conference membership from eight to six, all conference schools did not participate in all activities, and additional schools were needed, preferable with an enrollment around 300. Increasing membership, listing acceptable officials, improving publicity, and making ticket prices uniform were recommended.

95. PIENTA, Dale William. Contribution of Athletics in College to Public School Teaching. M.S. in Health and Physical Education. 1964. 38 p. (J. Collie)
Questionnaire returns from male teachers in Bureau County, Illinois, indicated that financial aid to athletes was beneficial to education because participation in sports at the college level provided an opportunity to become better physical education teachers and coaches and because many of the respondents would not have been able to complete their education without financial aid.

96. PUCK, Paul Edward. Cinematographical Analysis of Effective Batting Performance. M.A. in Health and Physical Education. 1964. 85 p. (E. E. Stish)
High-speed motion picture of four highly skilled, right-handed batters were taken simultaneously in the sagittal, frontal, and horizontal planes with large grids in the background and a synchronous clock in the field of all cameras provided synchronization. Enlarged positive prints were made from the most typical sequence for each subject. Stick figures were made by connecting the marked joints with lines, and angular measurements were made and graphed with respect to the three reference planes. Wide variation in the initial stance indicated that there was no "best stance" for all batters. During the forward stride, the hips rotated forward while the shoulders remained the same, or the shoulders and bat moved backward to put the muscles of the hips, shoulders, and arms on a stretch and thus provide more force during the swing. All subjects maintained the inclination of the trunk toward the plate relatively constant throughout the action. Another significant detail was that the head moved forward horizontally during the stride and did not rotate during the stride or swing, unlike the trunk.

97. RITCHIE, Patti Charlene. Analysis of Selected Starting Positions for Base Advancement in Softball. M.S. in Health and Physical Education. 1964. 62 p. (E. E. Stish)
Freshman college women (N = 37) with no previous experience in softball were timed in three trials running from first to second base after starting from four different positions. The comparison of group means indicated that a "sprinter's crouch" position with one heel on the base, the other foot advanced, the knees bent, and the hands in contact with the ground was significantly faster.

98. VIDRUK, Edward Henry. Effect of Intensity of Noise upon Human Performance of Selected Tasks. M.S. in Health and Physical Education. 1964. 73 p. (E. E. Stish)
The subjects performed three tasks involving coordination, strength, and endurance once a day for 18 days. Nine performances took place under high intensity "white noise" and nine were under lower intensity "white noise." The endurance task was continued longer under high intensity noise.

99. WILSON, Philip Keith. Effects of Weight Distribution and Football Stance upon Reaction and Movement Time. M.S. in Health and Physical Education. 1964. 119 p. (E. E. Stish)
Reaction times and movement times were recorded from 34 college football players moving either forward or laterally left or right from a 3-point stance with the weight either balanced or forward. Reaction times were significantly shorter with the weight forward for the laterally left

and right movements. Movement times were significantly shorter from the balance stance in all three movements. Total performance time was significantly shorter in the forward movement with a forward weight distribution.

100. ZAUGRA, John Francis. Comparative Effects of Isotonic and Isometric Exercises upon Muscular Strength. M. S. in Health and Physical Education. 1964. 81 p. (E. E. Stish)
Male high school students were divided into a control group (N = 20), an isotonic exercise group (N = 21) using sets of 15 repetitions 4 days a week for 4 weeks, and an isometric exercise group (N = 21) using one 6-sec. maximal isometric elbow flexion at 90° for the same period. Elbow flexion strength was measured at 55°, 90°, and 122° with a push-pull manuometer. Test reliabilities were .85, .92, and .92 respectively. The isotonic exercise program increased elbow flexion strength significantly at 125° but not at 55° or 90°. The isometric exercise program did not increase elbow flexion strength significantly.

University of Illinois, Urbana, Illinois (A. W. Hubbard)

101. ABRAMSON, Marlin P. Participation in Outdoor Recreation: Factors Affecting Demand in Christian County, Illinois. M. S. in Recreation. 1964. 93 p. (A. V. Sapora)

102. ADAMS, William C. A Causal Analysis of Treadmill Endurance Running Performance. Ph. D. in Physical Education. 1964. 196 p. (T. K. Cureton)

103. BANISTER, Eric W. Cardiovascular Parameters Including the Time Derivatives of the Brachial Pulse Wave in the Assessment of Physical Condition and the Efficacy of Training Programs. Ph. D. in Physical Education. 1964. 92 p. (T. K. Cureton)

104. BARTH, Edgar L. A Comparison of the Objectives, Operational Methods and Programs of College Unions with Those of Municipal Community Centers in Order to Share Reciprocal Learning. M. S. in Recreation. 1964. 90 p. (C. K. Brightbill)

105. BOELHAUWER, Douglas. The History and Development of Football at Rutgers University. M. S. in Physical Education. 1964. 121 p. (C. O. Jackson)

106. BOVINET, Sherry L. The Effects of an Endurance Program on the Physical Fitness of High School Girls. M. S. in Physical Education. 1964. 45 p. (A. W. Hubbard)

107. CARROLL, John A. Urban Campus College Unions and the Commuting Student. M. S. in Recreation. 1964. 84 p. (C. K. Brightbill)

108. CASE, Robert L. An Evaluation of the Improvement of Wrestling Skills and Competency. M. S. in Physical Education. 1964. 58 p. (E. F. Zeigler)

109. CHEN, Whei-Chu. An Investigation of the Effect of Physical Training and Wheat Germ Oil on All-Out Treadmill Run for Young Boys. M. S. in Physical Education. 1964. 34 p. (T. K. Cureton)

110. CULLEN, Florence P. The Effect of Uneven Terrain on the Golf Stroke. Ph. D. in Physical Education. 1964. 108 p. (A. W. Hubbard)

111. DAYTON, Norma M. Influence of Anthropometric Measurements on Bodily Flexibility Test and Grading. M. S. in Health Education. 1964. 44 p. (F. E. Boys)

112. FARDY, Paul S. The Effects of Bicycle Training on the Physical Fitness of Young Boys. M. S. in Physical Education. 1964. 109 p. (T. K. Cureton)

113. FARVAR, Aghdass. The Effects of the Canadian X-BX on the Physical Fitness of Women. M. S. in Physical Education. 1964. 103 p. (T. K. Cureton)

114. FERRITER, Kathleen J. A Cinematographic Analysis of Front Handspring Vaults of Women Gymnasts. M. S. in Physical Education. 1964. 58 p. (A. W. Hubbard)

115. FRYE, Mary Virginia. The Historical Development of Municipal Parks in the United States: Concepts and Their Application. Ph. D. in Recreation. 1964. 294 p. (C. K. Brightbill)

116. GRIFFIN, Richard R. Free-Time Recreational Activity Preferences of Sixth Grade Children, Obese and Non-Obese. M. S. in Health Education. 1964. 117 p. (F. E. Boys)

117. GRUENSFELDER, Melvin. A History of the Origin and Development of the Southeastern Conference. M. S. in Physical Education. 1964. 365 p. (C. O. Jackson)

118. GULYAS, Ronald. An Analysis of the Relationships Between Six Objective Motivation Tests and Seven Tests of Motor Performance. M. S. in Physical Education. 1964. 100 p. (T. K. Cureton)

119. HALLER, Dolores B. Motor Ability and Personality of Boys and Girls in Grades 4, 5, and 6. M. S. in Physical Education. 1964. 48 p. (A. W. Hubbard)

120. HERRON, Robert E. The Chronic Effects of a Walking and Running Exercise Program on Calf Blood Flow in Middle-Aged and Older Men. Ph. D. in Physical Education. 1964. 190 p. (T. K. Cureton)

121. HILL, Samuel E. The Design of a Farm-Recreation Facility. M. S. in Recreation. 1964. 132 p. (C. K. Brightbill)

122. HOOPS, Darold D. The Contributions of the Canadian 5BX Plan on the Physical Fitness of Adult Men. M. S. in Physical Education. 1964. 78 p. (T. K. Cureton)

123. HOWDEN, John Robert. Differences Between and Within Individuals on Seven Physiological Responses at Rest and During Exercise. M. S. in Health Education. 1964. 78 p. (F. E. Boys)

124. JENKINS, Robert R. The Effect of Shouting on Motor Performance. M. S. in Physical Education. 1964. 48 p. (A. W. Hubbard)

125. JESSUP, George C., Jr. The Constancy of Cardiovascular Variables in Young Boys. M. S. in Physical Education. 1964. 65 p. (T. K. Cureton)

126. KARR, Otis K., Jr. Effective Muscle Force. Ph. D. in Physical Education. 1964. 129 p. (A. W. Hubbard)

127. MCQUILLAN, James R. A Study of Interscholastic Football Injuries in the State of Illinois During the 1962 Season. M. S. in Physical Education. 1964. 63 p. (C. O. Jackson)

128. MAYHAK, David H. The Effect of a Limited Instructional-Practice Period on the Development of Selected Physical Skills Using the Non-Dominant Musculature. M. S. in Physical Education. 1964. 47 p. (C. O. Jackson)

129. NOBLE, Bruce J. The Role of Energy Metabolism in Maximal Performance Facilitated by Informational Cues. Ph. D. in Physical Education. 1964. 176 p. (T. K. Cureton)

130. PAINTER, Genevieve. The Effect of a Rhythmic and Sensory-Motor Activity Program on Perceptual-Motor-Spatial Abilities of Kindergarten Children. M. S. in Recreation. 1964. 104 p. (A. V. Sapora)

131. PARKIN, Darrell L. The Athletic Program of the Mormon Church: Its Growth and Development. M. S. in Physical Education. 1964. 74 p. (C. O. Jackson)

132. PAULSON, Lloyd J. Fees and Charges Practices of Local Public Park Departments, Recreation Departments, Park and Recreation Departments, and Recreation Departments Under Boards of Education in the State of Wisconsin. M. S. in Recreation. 1964. 129 p. (A. V. Sapora)

133. POWELL, John T. The Development and Influence of Faculty Representation in the Control of Intercollegiate Sport Within the Intercollegiate Conference of Faculty Representatives from Its Inception in January 1895 to July 1963. Ph. D. in Physical Education. 1964. 313 p. (K. J. McCristal)

134. ROBINS, William F. A Study of the History of Recreation Activities in Selected Mental Hospitals in Illinois, 1850 to 1930. M. S. in Recreation. 1964. 111 p. (C. K. Brightbill)

135. ROTHERMEL, Bradley L. Selected Physical Fitness Characteristics of Professional Baseball Players. Ph. D. in Physical Education. 1964. 103 p. (T. K. Cureton)

136. SLOTSKY, Phillip S. The Effect of Circuit Training on Mile Run Performances of College Freshmen. M. S. in Physical Education. 1964. 31 p. (A. W. Hubbard)

137. SORRELLS, Linda. The Relationship of Motor Ability to Self-Concept. M. S. in Physical Education. 1964. 65 p. (C. L. Lambert)

138. SPANGLER, James R. A Compilation and Analysis of Completed Research in Competitive Swimming and Diving in the United States from 1930 to 1963. M. S. in Physical Education. 1964. 303 p. (E. F. Zeigler)

139. SPASOFF, Thomas C. Space Standards for Physical Education and Athletics in Secondary Schools. M. S. in Physical Education. 1964. 96 p. (H. E. Kenney)

140. STOEDEFALKE, Karl G. Muscle Action Under Gravic (1G) and Simulated Agravic (Weightless) Conditions. Ph. D. in Physical

Education. 1964. 87 p. (A. W. Hubbard)

141. STOPKA, Ronald G. Effect of Controlled Rope Skipping on the Improvement of the Vertical Jump Ability of Selected Individuals. M.S. in Physical Education. 1964. 49 p. (H. E. Kenney)

142. STOREY, Edward H. A Method of Estimating the Demand for Outdoor Recreation. Ph.D. in Recreation. 1964. 84 p. (C. K. Brightbill)

143. STRAUSS, Robert N. A Survey of Fencing at Selected Colleges and Universities in the United States. M.S. in Physical Education. 1964. 57 p. (E. F. Zeigler)

144. SUMMERS, Stanley P. The Effect of Partial Sleep Loss on Motor and Cardiovascular Fitness. M.S. in Physical Education. 1964. 86 p. (T. K. Cureton)

145. TAYLOR, Lucile N. Developmental Dance in the Education of the Educable Mentally Handicapped Child. M.S. in Recreation. 1964. 109 p. (A. V. Sapora)

146. TIIDUS, Arvo. The Physical Fitness Status of the Canadian 1959 and 1963 Pan American Volleyball Teams. M.S. in Physical Education. 1964. 103 p. (T. K. Cureton)

147. TOBIN, Frances Mae. Effects of Physical Activity and Exercise on Bodily Flexibility. M.S. in Health Education. 1964. 54 p. (F. E. Boys)

148. TRYBEK, Arthur J. Attitudes Relating to Diet and Nutrition Among Parents of Overweight, Normal Weight, and Underweight Students. M.S. in Health Education. 1964. 66 p. (F. E. Boys)

149. WHITEMAN, Joanne M. The Correlations of Physiological Variables with Certain Personality and Motivational Factors. M.S. in Health Education. 1964. 74 p. (F. E. Boys)

University of Indiana, Bloomington, Indiana (K. W. Bookwalter)

150. BEHBEHANIAN, G. Reza. Role of Local Health Officers in Schools Not Having a School Physician. H.S.D. 1964. 249 p. (J. K. Rash)

Local health officers in Indiana were interviewed to determine their activities in schools which did not have a school physician. A rating scale of 134 recommended responsibilities of local health officers in schools was developed and then evaluated by 30 selected health experts. Of the 134 items in the rating scale, 94 were considered essential by the jury. The top three categories were environmental health, health services, and administration. The lowest three categories were education, health appraisal, and follow-up.

151. COOPER, Stewart E. Effective Techniques and Knowledges to Camp Counselors During Their Pre-Camp Education. Ed.D. 1964. 211 p. (G. G. Eppley)

A total of 176 incidents of campcraft skill or knowledge were obtained from 134 camping professionals. A panel of 20 authorities rated the effectiveness of the techniques or combinations classified from the incidents. No real unanimity was found concerning effective techniques for teaching campcraft activities to counselors during the precamp education.

152. DUNGEE, Grant Alan. A Comparison of the Health Knowledge Level of Students in Selected Negro Schools with the Ratings of Their School's Health Service and Health Instruction Programs. H.S.D. 1964. 144 p. (D. J. Ludwig)
The health service programs of Mississippi schools were rated on two scales. Tests of health knowledge were administered to senior students of 20 (10 good and 10 poor) randomly selected schools based on the quality of their programs. Health knowledge of seniors was better in schools having the better health service programs, formal health instruction having smaller enrollments, and schools located in the larger cities and regionally accredited.

153. FERNELIUS, Byrne C. Factors Related to the Recruitment of Personnel for the Recreation Profession. Rec.D. 1963. 460 p. (G. G. Eppley)
Data were obtained by questionnaires from 75 chairmen of recreation departments and from 1,213 recreation major students, representing 33 colleges and universities. The effectiveness of recruitment practices varied among the National Recreation Association's field districts. In the New England District on the East Coast, the recruitment practice of student visitations to college and university campuses exerted the strongest influence, while in the Pacific Northwest District the strongest influence was exerted by recreation major students.

154. GRAY, Walter W., Jr. An Experimental Study Utilizing the Problem-Solving Technique in the Ninth Grade Health Class. H.S.D. 1964. 170 p. (J. K. Rash)
One health class was taught by the problem-solving technique and the other health class was taught by the conventional technique of lecture, questions, and answers. Data were obtained by maintaining a daily log, periodically taping classroom discussions, and administering a pretest and posttest using Pool's Health Knowledge Test for High School Students. No significant differences were found between the two classes relative to pupil achievement, retention of health knowledge facts, ability to use the problem-solving steps, and retention of ability to use these steps. The problem-solving group developed considerably in their abilities to think critically and became precise in problem identification.

155. HUG, John W. Analysis of the Factors Which Influence Elementary Teachers in the Utilization of Outdoor Instructional Activities. Rec.D. 1964. 236 p. (T. R. Deppe)
Two groups of 30 teachers each were randomly selected in a six-county area in north central Illinois from teachers who did and did not conduct outdoor instructional activities in their classes. The teachers in each group rated each of 90 factors as to its influence in the use of outdoor instructional activities. The notion that "textbook" or "basic" materials must be covered and the lack of outdoor curricular materials tend to discourage upper elementary teachers from using outdoor instructional activities in their teaching.

156. JONES, John W., II. The Effects of Repetitions on Strength Increases Produced by Repetitive Resistance Exercise. P.E.D. 1964. 104 p. (J. B. Daugherty)
An investigation was made of the effects of the use of different numbers of repetitions of isotonic exercise on strength gains produced through progressive resistance exercises. The equipment used consisted of

dumbbells, weights, exercise tables, metronome, public address system, tensiometer, pulling assembly, goniometer, and measurement table. Subjects were 65 volunteer men without previous weight training and they were assigned at random to one of four groups. Groups were assigned at random to treatments. No significant increases in strength were obtained.

157. LEAVITT, Herbert Douglas. A Determination of the Effectiveness of Selected Methods of Teaching Preparing for Marriage to Students at the College Level. H. S. D. 1964. 147 p. (D. J. Ludwig)
Three methods of teaching (lecture, audiovisual, and combination lecture and audiovisual) were used in teaching 133 randomly selected students who were randomly assigned to three groups. Groups were randomly assigned to method. Pretreatment data were obtained by administering Kilander's Information Test on Human Reproduction, McHugh's Sex Knowledge Inventory—Form Y, and the College Entrance Examination Board's Scholastic Aptitude Test. Each group met twice weekly for six weeks. At the end of the teaching period, McHugh's Sex Knowledge Inventory—Form X was administered to the subjects. The audiovisual method was the least effective. The lecture method appeared to be as effective as the lecture-audiovisual method.

158. MARIANI, Thomas Joseph. The Effectiveness of Three Methods of Practice Driving Instruction in Driver Education. H. S. D. 1964. 162 p. (B. I. Loft)
A pilot study of the experiment was made at Bloomington (Indiana) High School, involving 60 students randomly assigned to three groups. In the final experiment, 76 volunteer students from Statesboro and Marvin Pittman high schools in Statesboro, Georgia, were assigned at random to three groups and treatments (practice driving of 6 hr.; 3 hr. observation and 3 hr. practice driving; and observation of 6 hr.) were assigned at random to the groups. The McGlade Road Test was used to measure driving proficiency and a two-part driving skills knowledge test (Form A and Form B) was used for measuring driving skills knowledge. Significant differences were found in favor of the practice driving group and the observation-practice driving group over the observation group in the achievement of mean driving skills road test scores, but a nonsignificant difference was found between the practice driving group and the observation-practice driving group. The observation method was effective in increasing a knowledge of driving skills.

159. MEYNE, Robert H. A Situation Response Attitude Scale for College Men Physical Education Majors. P. E. D. 1964. 174 p. (K. W. Bookwalter)
Critical evaluation of an original list of 183 items reduced the list to 125 items which were submitted to a jury of 15 experts to determine the order of desirability. On the basis of jury judgments, 17 items were eliminated. Two forms were developed so that the scale could be administered in one class period. Form A was administered to 187 college students (69 freshmen and 118 sophomores) and Form B was administered to 188 college students (76 freshmen and 112 sophomores). The final form of the scale was composed of 40 items, 19 items from Form A and 21 items from Form B. These items discriminated at the .05 level of confidence or better; only 12 items had a t ratio of less than 3.00. The final form was administered to 253 college students (95 freshmen and 158 sophomores). A significant difference was found between the scores by freshmen and sophomores.

160. MORRISON, Lonnie Leotus. A Test of Basic Skills for College Women. P. E. D. 1964. 162 p. (G. F. Cousins)

A 20-item criterion battery was administered to 120 college women at Madison College during a 4-week period. T scores were summed for each category of test items (body impetus, giving impetus to an object, and using an implement to give impetus to an object) and for the battery of 20 items. The data were treated by means of the BIMD 34 program. A three-item and a five-item battery were selected to predict basic sports skills ability. The validity coefficients for the five selected items ranged from .48 to .79. The reliability for these items ranged from .69 to .92. The objectivity coefficients ranged from .98 to .99. The three-item battery had a multiple coefficient of .93 and a regression T score form of X_c = 5.5671 obstacle race + 4.8187 running jump and reach + 5.5113 basketball throw for distance + 217.7224. The five-item battery had a multiple coefficient of .96 and a regression T score form of X_c - 4.4284 obstacle race + 4.0455 running jump and reach + 3.3130 wall speed + 3.3931 basketball throw for distance + 2.1121 ball bounce + 137.4962. Norms for five groups of ability were developed for both tests.

161. SCHULTZ, Gordon W. *The Effects of Direct Practice, Repetitive Sprinting, and Weight Training on Selected Motor Performance Tests*. P.E.D. 1964. 114 p. (J. B. Daugherty)
Six training approaches were used to study the effectiveness upon performances in four selected tests of motor skill, speed, coordination, and power. Subjects were 120 men volunteers enrolled in the Indiana University service program. The subjects were randomly assigned to groups and groups to treatments. Short periods of training, or cessation of training, did not affect performance, except in the case of the zigzag run. Direct practice of the zigzag run was found to be superior to both weight training and repetitive sprinting in the performances over a 9-week period.

University of Iowa, Iowa City, Iowa (L. E. Alley and M. G. Scott)

162. BREMNER, J. Barron. *Measurement of Potential Wrestling Ability*. M.A. in Physical Education. 1964. 46 p. (D. R. Casady)
Members of a college wrestling team or intramural wrestlers (N = 30) were rated on wrestling ability and given the Athletic Fitness Index, sustained grip test, front and back leaning-rest test, Bass Stick Test, Blindfolded Bass Stick Test, Balanciometer Test, and Jennett Choice-Reaction-Time Test. The resulting multiple regression equation was: Wrestling Ability = Bass Stick Score + 20.43 Dipping Score + 13.50 Balanciometer Score - 1213.34.

163. BURKHARDT, John E. *The Effect of Isotonic and Isometric Exercises on the Contraction and Relaxation of the Biceps Brachii.* M.A. in Physical Education. 1964. 45 p. (A. J. Wendler)
Twenty-four high school football players were divided randomly into two groups which were given either isometric or isotonic exercise programs for 10 weeks. Biceps strength was measured before and after the program with a cable tensiometer, and contraction, relaxation, and total movement times for the biceps stimulated electrically were obtained from kymograph recordings. Both groups gained significantly in strength at the .05 level but neither program affected the response times.

164. CHEVILLE, Lila D. *The Folk Dances of Panama.* Ph.D. in Physical Education. 1964. 404 p. (M. G. Scott)
The traditional dances of the Spanish-speaking population but not dances imported from other countries or practiced by the indigenous Indian

tribes were investigated during two years in the Republic of Panama with field trips to rural towns. Dance descriptions and written music were provided for el tamborito, la cumbia, la majorana, el socavón, el punto, el zapatero, los diablicos limpios, los diablicos sucios, el torito, la pajarilla, and el bunde. Dances which were described without specific directions or music were el atravesado, el bullerengue, la tuna, los cucuás, and los congos. The small, five-string guitar called la mejorana, the typical song form known as la decima, and the method of constructing and playing the native-made drums were discussed fully and el rabel (violin), el guiro, las maracas, la accordión, and las flautas (flutes) were briefly described. National costumes for men and women were described in detail.

165. CHUI, Edward F. Effect of Isometric and Dynamic Weight Training Exercises upon Strength and Speed of Movement. Ph. D. in Physical Education. 1964. 153 p. (A. J. Wendler)
Ninety-six university men were divided randomly into groups that did no weight training or used isometric contraction, rapid contraction, or slow contraction in six barbell exercises performed 3 days a week for 9 weeks. Initial and final strength scores and speed of movement scores against no resistance, a specified resistance, and 1.5 times the specified resistance were obtained. Gains in strength were accompanied by gains in movement speed with and without resistance but the difference between the exercise groups were not significant at the .05 level.

166. CLIFTON, A. Kay. An Exploration of the Situational Factors in Recreation Leadership. M.A. in Recreation. 1964. 191 p. (B. van der Smissen)
Role theory describes the process of learning roles, and recreation leadership was discussed as a learned role. This theory was applied to recreation leadership. Recreation leadership was discussed in terms of 14 groups and seven activity dimensions including size, polarization, dependence, hedonic tone (group), and physical locomotion and competence requirement (activity). Relationships between varying degrees of each dimension and leadership behavior were examined. Recreation leadership involves special knowledges that are trainable and research should be directed toward their acquisition.

167. COLGATE, John A. Arm Strength Relative to Arm Speed. Ph. D. in Physical Education. 1964. 100 p. (G. M. Asprey)
Forty-nine subjects were divided into groups that performed, on pulley weights 3 days a week for 6 weeks, horizontal adduction and flexion, horizontal abduction and extension, all four exercises, or no exercises. The strengths of the related arm and shoulder muscles were measured initially and finally with a cable tensiometer, and movement times with no resistance and with 5 lb. resistance were measured to the nearest .001 sec. A significant increase in arm and shoulder strength was accompanied by a significant increase in arm speed with or without added resistance but the correlations were not always significant or positive. The training programs strengthened muscles that acted agonistically during training.

168. COPPOCK, Doris. Development of an Objective Measure of Rhythmic Motor Response. Ph. D. in Physical Education. 1964. 98 p. (M. G. Fox)
The test of rhythmic motor response consisted of 23 rhythmic patterns of two identical measures each in 3/4, 4/4, or 5/4 meter. The subject walked each pattern with a change of weight on each beat and was scored on meter, tempo, and total. The meter scoring appeared superior. The test was administered to 92 women in dance classes at the University of

Iowa. Test reliability was .91. Three teachers rated students in their dance classes. Reliability of the ratings was .77. The teacher ratings and the test of rhythmic motor response correlated .51; the rhythmic motor response and the Gordon Rhythm Imagery Test correlated .69. The reliability of the Gordon Rhythm Imagery Test was .87, but it correlated only .36 with teacher ratings. The correlations between the test of rhythmic motor response and the Scott Motor Ability Test and ACT scores were not significant.

169. CUNNINGHAM, Phyllis. Measuring Basketball Playing Ability of High School Girls. Ph. D. in Physical Education. 1964. 175 p. (D. R. Mohr)
One test from the literature, a revised test, and 5 new tests were administered to 108 high school girls in St. Louis, Missouri, during the year 1963-64. The sum of four judges' ratings was used as a criterion for validity. Reliabilities stepped up by the Spearman-Brown Prophecy Formula for predicting the reliability for three trials of each test and obtained validities were: 12-ft. shooting .81 and .46, guarding .95 and .46, rebound-dribble .82 and .34, run and pass .71 and .46, speed shooting .62 and .05, dribbling .89 and .46, and modified Edgren Test .94 and .60. Intercorrelations ranged from .09 to .52. The final battery, with a validity of .69, contained the run and pass, dribbling, and modified Edgren tests.

170. DOUTHITT, John E. Effects of Specific Social-Incentive Conditions on Performance on Physical Fitness Tests. Ph. D. in Physical Education. 1964. 156 p. (L. E. Alley, R. S. Wilson)
The AAHPER Youth Fitness Test was administered to 165 girls and 185 boys in grades 10 and 11, and the subjects were divided into five matched groups for each sex on the basis of composite scores. The control group was retested twice and the experimental groups were retested twice under one of the following incentive conditions: team competition, level of aspiration, competition with a person of equal ability, and competition with a person of markedly different ability. Level of aspiration proved more effective than team competition or competition with an equal and the reliability of the tests varied with the motivating conditions.

171. DUFFETT, Phyllis Ellen. An Electromyographic Study of Selected Muscles Involved in Two Methods of Stair Climbing. M. A. in Physical Education. 1964. 92 p. (M. G. Fox)
Integrated action potentials were recorded with an Offner Type R Dynograph from 20 women climbing stairs with the whole foot and only the ball of the foot contacting the tread. The integrated AP were measured with a Keuffel and Esser Model 4242 polar planimeter. The rectus femoris, gluteus maximus, and gastrocnemius AP were essentially the same with either method of climbing stairs but the vastus lateralis was significantly more active and the biceps femoris was significantly less active with the whole foot method.

172. FEIN, Judith Toby. Construction of Skill Tests for Beginning Collegiate Women Fencers. M. A. in Physical Education. 1964. 49 p. (M. G. Scott)
Data were collected and judges rated fencing ability in a bout situation during the last week of the semester. The advance, lunge, recovery, and retreat test had an odd-even reliability of .88 and a validity of .13. The parry four and riposte test had a test-retest reliability of .77 and a validity of .39.

173. FRANTZ, Thomas T. Academic, Physical, and Environmental

Differences Between Nonathletes and Various Categories of Athletes. M. A. in Physical Education. 1964. 81 p. (L. E. Alley)

Freshman athletes (N = 130) in football, cross country, fencing, gymnastics, basketball, wrestling, and swimming at the University of Iowa were matched in terms of high school rank in class and college entrance examination scores with 130 freshman nonathletes. The athletes were younger, taller, heavier, and came from larger high schools but had similar socio-economic backgrounds, major fields, grade point averages, and attrition rate as nonathletes. Successful athletes came from larger high schools but football players came from smaller schools and had poorer socio-economic backgrounds, lower college entrance examination scores, lower grade point averages, and higher attrition rates than other athletes.

174. GROUWINKEL, Gary. A Comparison of the Effect of Isotonic Exercises and Isometric Exercises on Speed of Arm Movement and on Arm Strength. M. A. in Physical Education. 1964. 35 p. (A. J. Wendler)

Forty-three high school wrestlers were divided randomly into three groups and tested before and after the season. Two groups had supplemental isometric or isotonic exercise programs. The isometric exercise group showed significant gains at the .05 level in arm speed, standing press, arm curl, and supine press; the isotonic exercise group gained significantly in arm curl and supine press. The differences between groups were not significant.

175. HANSEN, Gary F. Effect of Selected Motive-Incentive Conditions upon Development of Strength Through an Isometric Training Program. Ph. D. in Physical Education. 1964. 99 p. (L. E. Alley, R. S. Wilson)

Seventy-two university male freshmen were divided into six matched groups on the basis of an initial test of elbow flexion strength and endurance. The five isometric exercise groups trained twice weekly for 6 weeks with three 15-sec. bouts and 30 sec. rest by straining to flex the elbow against a back and leg dynamometer connected to an Esterline-Angus Graphic Recorder. The exercise groups had added incentives of either team competition, standardized goals, competition with a person of equal ability, visual knowledge of progress, or knowledge of best scores. All exercise groups made gains in strength that were significant at the .01 level. Only the groups with visual knowledge of progress and team competition made significant gains in muscular endurance at the .01 level. The mean differences between the exercise groups were not significant.

176. HILL, Freddie Emily. The Relationship Between Selected Measures of Kinesthesis, General Motor Ability, and Rates of Learning Simple and Complex Motor Movements. Ph. D. in Physical Education. 1964. 103 p. (M. G. Scott)

Dart throwing was the simple learning problem and bait casting was the complex problem. Progress was tested regularly with a concentric target at long and short range. Kinesthesis tests had essentially zero correlation with both types of learning, excepting possibly the floor target test. The Scott Motor Ability Test correlated significantly with dart throwing but not with bait casting. Bait casting showed a fairly consistent daily improvement trend but dart throwing was erratic with no improvement trend.

177. JIROUCH, Janice M. Attitudes of Twelfth Grade High School Girls Toward Physical Education. M. A. in Physical Education. 1964. 52 p. (M. G. Scott)

A 20-statement, free response test was administered to 167 grade 12 girls in five schools around Cedar Rapids, Iowa. The reliability coefficient was .975. The test was satisfactory and the attitudes were generally favorable. The aspects of physical education most favored were learning new skills, developing fitness, exercising, working with others, relaxation, developing sportsmanship, making new friends, and being out of doors. The undesirable aspects were gym uniforms, showers, written and physical fitness tests, and messy hair.

178. LANE, Beulah L. A Survey of the Extra Class Activities Supervised by Women Physical Education Teachers in Iowa Public Secondary Schools. M. A. in Physical Education. 1964. 96 p. (M. Fox)

The questionnaire had an 80 percent return. The majority of respondents taught only physical education and 90 percent were majors. Cheerleading, girls' recreation associations, intramural programs, and play days were the most common activities supervised by the greatest number. The majority received no extra compensation but thought the activities listed should be supervised by physical education teachers. Preparation for supervision was mainly as participants in similar activities in college but the majority favored a unit in a course as desirable preparation.

179. MALIZOLA, Florence. The History of the Graduate Program for Women at the State University of Iowa. M. A. in Physical Education. 1964. 281 p. (D. R. Mohr)

Material from the University archives, presidents' files, personal files, and interviews with previous and present staff members were used to trace the development of the graduate program from its initiation by Elizabeth Halsey in 1926, through the development of research and laboratory work under M. Gladys Scott, to the present. From 1927 to February 1964, 93 Ph. D. and 290 M. A. degrees were awarded to women from 42 states and nine foreign countries with all but 14 completing a thesis. The most popular areas of research have been psychology and methods, tests and measurements, audiovisual aids, anthropometry, curriculum and programs, and recreation.

180. MAPES, Donald F. Electromyographic Study of Functions of Selected Muscles in Check Action, Ballistic Movement, and Follow-Through During the Baseball Throw. Ph. D. in Physical Education. 1964. 132 p. (G. M. Asprey, M. D. Wheatley)

Action potentials from arm and shoulder girdle muscles during a baseball throw were recorded on a Grass electroencephalograph and the movement was recorded simultaneously with a synchronized movie camera. The middle and posterior deltoid, teres major, latissimus dorsi, and long head of the biceps brachii performed an antagonistic function ("check action") during the throw. Ballistic movement was not observed during any part of the throw—at least one muscle of the 10 studied, but not always the same muscle, performed an agonistic action throughout the throw. During the follow-through, the upper part of the trapezius, anterior deltoid, medial head of the triceps brachii, and lower part of the serratus anterior performed an agonistic function, and the middle and posterior deltoid and the long head of the biceps brachii performed an antagonistic function.

181. McLELLAN, Mary I. A Study of the Use of Music as an Aid in Teaching the Badminton Serve. M. A. in Physical Education. 1964. 89 p. (M. J. Barnes)

Forty-one college women who were beginning badminton players were divided into two equated groups on the basis of the Scott Motor Ability Test.

One group practiced with and one without musical accompaniment for 18 lessons. Long and short serving ability was tested on alternate days throughout. The groups taught with and without music showed no significant difference. The correlation between motor ability and badminton serving ability was low, not consistent for the two serves, and not high enough for predictive purposes.

182. SMITH, Bill. A Work Activity Analysis of the Position of Hospital Recreation Director in Mental Institutions. M. A. in Recreation. 1964. 107 p. (B. van der Smissen)
Questionnaires were distributed to directors registered with the Council for the Advancement of Hospital Recreation throughout the United States. Participants recorded the nature and duration of all work activities during two periods of five work days from Wednesday through Tuesday. The data were classified under nine major functional and four nonfunctional activities with 56 subcategories. Academic background, personnel supervised, years of employment, and titles were also summarized.

183. TOMLINSON, Janet. Attitudes of Junior and Senior High School Girls Toward Physical Education in Laboratory Schools. M. A. in Physical Education. 1964. 46 p. (D. R. Mohr)
The Kneer Adaptation Inventory was administered to 137 girls taught by a transient staff and 272 girls taught by a permanent staff. Homogeneity of variance was tested with F at the .01 point, and mean differences in attitude within grades were tested with t at the .01 level. Students with a permanent staff in grades 9, 10, and 11 had significantly higher attitudes.

184. VAN ATTA, William D. Techniques of Performing Basic Swimming Strokes. Ph. D. in Physical Education. 1964. 235 p. (L. E. Alley)
Information on the elementary back, back crawl, orthodox breast, underwater breast, butterfly, dolphin butterfly, side, and front crawl strokes was compiled and classified from 27 books, 45 articles, and 14 theses published from 1946 through 1960. A total of 2494 statements were listed and the disagreements were summarized at the end of each chapter.

185. VANDINE, Dora. A Comparison of the Effects of Isometric and Isotonic Exercises on Reduction of Girth of the Glutei and Thigh Muscles. M. A. in Physical Education. 1964. 55 p. (D. R. Mohr)
Women volunteers were randomly assigned to exercise groups working 5 days a week for 8 weeks. Girth measurements were taken 4 cm. above the trochanters, at trochanter level, at gluteal fold level, and midway on the thigh prior to the program and at 2, 4, 6, and 8 weeks. Both groups showed significant reductions in all girth measurements over the 8-week period but the mean differences between groups on corresponding tests were not significantly different at the .05 level. The isotonic exercise group had greater, but not significantly greater, mean changes between the initial and final measurements.

186. WHITE, James R. The Food Habits of Male High School Swim Team Members During the Swimming Season. M. A. in Physical Education. 1964. 38 p. (G. M. Asprey)
The eating habits of 103 male high school swimmers during the competitive season were analyzed from questionnaire returns. Fifty percent took vitamin or energy pills during the season and 54 percent ate a special pre-meet meal. High ranked swimmers ate meals with significantly fewer calories on meet days than did low ranked swimmers.

187. WILLIAMS, JoAnn Kay. The High School Girls' Image of Physical

Education as a Profession. M. A. in Physical Education. 1964. 58 p. (M. G. Scott)
A multiple choice, projective test with one favorable, two neutral, and one unfavorable line sketch image was constructed on the basis of interviews and free responses of students and teachers. After two trial administrations and revisions, the test was given to 148 girls in six Iowa high schools. Item analysis reduced the test to a valid 10-item battery which differentiated between favorable and unfavorable images of physical education as a profession.

188. WYSE, Berdene. Relationships Between Hand, Arm, and Shoulder Strength, Height-Weight Ratio, and Ability to Perform the Bent Arm Hang. M. A. in Physical Education. 1964. 66 p. (D. R. Mohr)
Measurements of grip strength, push and pull strength, body weight, height-weight ratio, and arm-shoulder strength-endurance (bent arm hang) were taken on 57 grade 5 girls, 72 grade 9 girls, and 62 college freshman women. The measures were intercorrelated within groups. All groups had significant correlations between grip and push-pull strength, grip and weight, push-pull strength and height-weight ratio, push-pull strength and weight, bent arm hang and height-weight ratio, and bent arm hang and weight. Girls in grades 5 and 9 also had significant correlations for grip strength and height-weight ratio. The only significant difference between correlations was between the grip and push-pull strength correlations for grade 5 girls and college women.

Louisiana State University, Baton Rouge, Louisiana (J. K. Nelson)

189. BOWERS, Louis A. An Investigation of the Effects of Autosuggested Muscle Contraction on Muscular Strength and Size. Ph. D. in Physical Education. 1964. 99 p. (J. K. Nelson)
Autosuggested muscular contraction was compared to isometric and static contraction. The cross transfer of strength and size development to the contralateral unexercised limb was also investigated. Sixty-one male subjects assigned to one of four groups performed five contractions of the elbow flexor muscles on 3 days a week for 6 weeks. Either isometric, static, or autosuggested muscular contraction significantly increased muscle strength but not muscle size. Isometric exercise was significantly more effective than either static or autosuggestion exercise in developing muscle strength. No cross transfer of strength or size from the exercised to the contralateral unexercised arm occurred.

190. EMERY, Curtis R. The History of the Pan American Games. Ed. D. in Physical Education. 1964. 275 p. (J. W. Kistler)
The purpose was to produce an accurate, factual account of the origin and development of the Pan American games and to identify noteworthy incidents which seemingly have added to or detracted from the successful operation of the games. Information was obtained from official records and reports, correspondence and interviews with various leaders and officials, and accounts in periodicals and newspapers. The games appeared to be firmly established with a constant increase in participation and spectator interest. The language barrier was apparently no longer a major problem. The games have become a vital part of the Olympic program and seem to be accomplishing their purpose of cementing the bonds of friendship and solidarity among the people of the Americas.

191. FANT, Helen E. An Investigation of Certain Aspects of Physical Education in Selected Universities in the United States. Ph. D. in

Physical Education. 1964. 200 p. (M. Moore)
Information concerning organizational patterns and aims, professional preparation, basic instruction, and recreation programs for women, and policies concerning the faculty were obtained by visitation, interview, and observation at seven universities and compared with published sources. The primary trends were: movement of physical education toward departmental status in liberal arts colleges and away from colleges of education, defining the nature and scope of physical education's unique body of knowledge, adding a fifth year, instituting more selective admission to graduate study, increasing interest in individual and dual sports and coeducational activities, and extending research.

192. GROSS, A. Thomas. A Study to Determine Relationships of Physical Fitness to Motor Educability, Scholastic Aptitude, and Scholastic Achievement of College Men. Ed. D. in Physical Education. 1964. 74 p. (J. K. Nelson)
The subjects were 113 male students enrolled in tennis, golf, and swimming classes at Pensacola Junior College, Pensacola, Florida. Tests used were the Navy Standard Physical Fitness Test, the Adams Motor Educability Test, and the School and College Ability Test for Scholastic Aptitude. Scholastic achievement was determined from total grade point average for one semester. Significant correlations were found between physical fitness and motor educability, between physical fitness and physical education activity grades, and between motor educability and physical education grades. No significant relationships were found between physical fitness and scholastic aptitude or between physical fitness and scholastic achievement.

193. HAWTHORNE, Martha E. A Study of the Effectiveness of the Slow-Motion Picture in Teaching Golf. M. S. in Physical Education. 1964. 46 p. (F. A. Drury)
Fifty-eight women students at Louisiana State University were randomly assigned to two groups. Slow-motion color pictures were taken of all subjects, using a Bolex camera equipped with wide angle lens. The experimental group was shown their pictures, and their performance was criticized individually. After both groups had three more class periods of practice, final pictures were taken of all subjects. A panel of three judges, unaware of the group to which each subject belonged, rated all pictures. The ratings, treated with analysis of covariance, showed that the experimental group's performance was significantly superior to that of the control group. Slow-motion picture study was an effective device for improving beginning golfer's form.

194. KITE, Joseph C. The Effects of Variations in Target Size and Two Methods of Practice on the Development of Accuracy in a Motor Skill. Ph. D. in Physical Education. 1964. 88 p. (J. K. Nelson)
Eighty high school freshman and sophomore boys were divided into four equated groups on the basis of the one-hand push shot in basketball. The groups practiced 4 days per week for 4 weeks with either the official 18 in., 15 in., 18 in. (with target installed), or 21 in. basket. Half of the subjects in each group attempted 20 shots and the other half attempted 40 shots per practice period. Analysis of variance indicated that practice with all four target sizes resulted in significant gains but not in significant differences between the target sizes. Practicing 40 shots per period was significantly superior to practicing 20 shots per period in developing accuracy.

195. LIFE, Mary Louise. The Effects of Supplementary Isometric Exercises with Swimming and Golf on Selected Physiological Factors of College Women. Ph. D. in Physical Education. 1964. 80 p.

(J. K. Nelson)
The Roger's PFI and a cardiovascular efficiency test for girls and women were administered to 96 college women in physical education basic skill courses at the beginning and end of 8 weeks of either beginning golf or intermediate swimming combined with or lacking added isometric exercises. Analysis of covariance and t tests indicated that all groups improved significantly in the PFI and all groups improved significantly in cardiovascular efficiency except the group which had golf alone. Supplementary isometric exercise was significantly superior to golf alone in developing cardiovascular efficiency.

196. MARCEL, Norman A. A Study of Selected Private Nonprofit Recreational Clubs in the Baton Rouge Area. Ph. D. in Physical Education. 1964. 131 p. (F. A. Drury)
The financing, administration, organization, facilities, and programs of 11 private, nonprofit recreation clubs in the Baton Rouge area were studied by means of a questionnaire, personal visitation, interviews, and analysis of official records. Membership was restricted primarily on the basis of residence location. Swimming was the most popular activity and accounted for the largest financial expenditure for facilities. The clubs were financially stable and were increasing their facilities as income permitted. It was apparent that a definite trend toward establishing private clubs had made a significant contribution to recreation.

197. STEEL, Donald H. A Study of the Influence of Aging upon Selected Physical Tasks. Ph. D. in Physical Education. 1964. 158 p. (J. W. Kistler)
A battery of physical performance tests was administered to 148 adult males ranging in age from 20 to 68 years. Agility, grip strength, accurate throwing, speed of arm movement, static balance, and flexibility declined significantly after the late 20's and early 30's. Depth perception declined only slightly after age 40. When the subjects were classified as either active or inactive in terms of their daily activities, the active groups outperformed the inactive groups on all tests except arm movement time and the Tuttle Pulse-Ratio. The Tuttle Pulse-Ratio test showed no significant difference in mean performance by age group or by activity level. The older subjects appeared in better condition than the normal population. Individual performances at the upper age levels were superior in some cases to the average of the younger groups.

198. STERLING, Duane R. Position Selectivity of Isometric Strength Resulting from Isometric Exercise. M. S. in Physical Education. 1964. 81 p. (F. A. Drury)
Two groups of college males were administered isometric strength tests at 95° and 170° of elbow flexion, knee flexion, and knee extension. One group of 29 subjects exercised at positions of 95° elbow flexion, 170° knee flexion, and 170° knee extension. The other group of 27 subjects exercised at 170° elbow flexion, 95° knee flexion, and 95° knee extension. The exercises were 8-sec. maximal contraction performed 3 days a week for 10 weeks. A final strength test was administered in all six positions at the end of the training program. Position selectivity of strength gains varied from one muscle group to another. Gains in elbow flexion strength were highly specific to the position exercised while knee extension had a low specificity. Knee flexion strength gains varied in position selectivity depending upon the position of exercise.

199. WHITE, Esther Boyd. A Study of the Frequency of Use of Medical Services in Relation to Personality Factors and to the Academic Achievement of Students at the University of North Carolina at Greensboro. Ed. D. in Health Education. 1964. 72 p.

(E. G. Clark)
The subjects were 164 women selected on the basis of attendance at the medical services during their freshman year as either high attenders or low attenders. The Minnesota Multiphasic Personality Inventory was administered to all subjects and interpreted independently by two clinical psychologists. Chi square was used to treat the data. A significant relationship existed between the use of the medical services and personality patterns, with a significantly greater number of high attenders having deviant personalities than those with low medical services attendance records. No significant relationship was found between use of medical services and academic achievement.

Michigan State University, East Lansing, Michigan (J. A. Wessel)

200. CONGER, Patricia. Physical Performance of Body Form as Related to Physical Activity of College Women. M.A. 1964. 98 p. (J. Wessel)
Thirty-five college women ranging in age from 18 to 22 were divided into more and less active groups on the basis of their activity history. Strength, flexibilities, specific gravity, skinfold fat, widths, girths, height, and weight were measured and some selected indices computed. The measures were intercorrelated and subjected to elementary linkage analysis. Mean differences between groups were tested for significance with F and t. The more active group was heavier and had greater lean body mass, specific gravity, arm, shoulder, and trunk strength (except arm extension), and all body form measures except knee width and knee, supra-iliac, and pubic skinfolds. Weight; lean body mass; specific gravity; and arm, shoulder, and trunk strength means were significantly higher at the .05 level. Minimal differences were found between percent fat, ponderal index; hip, leg, and total strengths; and shoulder, trunk, ankle, hip, and total flexibilities. Weight and hip girth were the primary factors linked with most of the variables.

201. COUTTS, Kenneth Douglas. A Method for the Controlled Muscular Exercises of Laboratory Rats. M.A. 1964. 14 p. (W. Van Huss)
Methods for chronic exercise of specific muscles or muscle groups in laboratory rats were sought rather than the usual methods of exercising the whole animal as a basis for determining the effects of muscular exercise under better controlled and more specific conditions. Electrical stimulation with permanent electrodes of the nerve serving the muscle or muscle group rather than the muscle proved simpler, better, and more natural. An exercise rack which stabilized and immobilized the animal but permitted free movement of the body part being exercised was developed and a method of measuring work output and muscular force during exercise was developed. The apparatus and method was designed specifically for exercising the gastrocnemius muscle through stimulation of the sciatic nerve which also activated muscles involved in knee flexion and plantar flexion of the foot. The general principles and method were applicable to other movements and muscle groups.

202. DARWICK, Doris. Maximal Work Capacity as Related to Strength, Body Composition, and Physical Activity in Young Women. M.A. 1964. 135 p. (J. Wessel)
Twenty-eight college women ranging in age from 18 to 22 were measured for body fat with fat-free body weight and specific gravity computed, habitual physical activity by a recall questionnaire, strength and 11 cable tensiometer measures, and maximal work capacity by maximal oxygen consumption in a graded treadmill test. Gross body weight and fat-free body weight correlated .64 with maximal oxygen consumption.

Estimated daily caloric expenditure correlated .69 with body weight and .62 with fat-free body weight. Maximum oxygen consumption correlated .51 with hip flexion and .50 with knee extension strength. Hip flexion correlated .88, knee extension .84, and elbow flexion .83 with total strength. Active subjects were heavier, had greater fat-free body weight, expended more energy per day, had higher maximal oxygen consumption, and were stronger in total and trunk extension strength. Physical education majors were higher in these than nonmajors.

203. HORWOOD, William Arthur. A National Study of the Current Practices of Secondary Coaches in Recommending Diets for Athletes. Ed.D. 1964. 201 p. (W. Van Huss)
Questionnaires were mailed to a 2.5 percent sample of public high schools in the United States, and coaches of varsity basketball, cross country and track, football, swimming, and wrestling were asked to respond. Replies were received from 456 schools (83 percent). Returns were categorized by region, sport, community size, community type, school size, and the age, number of years experience, educational preparation, number of sports, and bases for recommendations of the coach. Beef, eggs, fruit, fruit juices, and milk were recommended enthusiastically but candy, coffee, fried foods, pastries, and carbonated beverages were most often considered undesirable. Coaches from New England and Pacific Coast states allowed athletes more latitude in dietary choices, as did coaches of three sports, but West North Central coaches were more restrictive, as were coaches in smaller, rural schools, the younger and less experienced coaches, and especially wrestling coaches. The coaches showed no consensus on food supplements but coaches of three sports favored them. Physical education majors made similar dietary recommendations and tried to exercise more control than the minors or nonprofessionally trained coaches. Most coaches based their recommendations on their own athletic experience; few allowed medical or nutritional advice, and the manner of advising athletes was quite inconsistent.

204. KALENDA, Lenore May. Relationships of Body Alignment with Somatotype and Center of Gravity in College Women: A Pilot Study. M.A. 1964. 46 p. (J. Wessel)
Anterioposterior body alignment was assessed with the Massey technique, center of gravity with the Cureton-Wickens test, body type by Parnell's method, and foot length with a pedograph on 80 college women between 18 and 21 years. Tests were repeated to determine reliability. Low but statistically significant correlations showed that greater endomorphy was associated with greater deviation from standard posture and greater ectomorphy with better postural alignment but body alignment seemed independent of mesomorphy. Increasing ectomorphy was associated with having the gravity line farther forward and increasing endomorphy with having the gravity line nearer the malleolus. Total posture was highly related to segmental angulations. The best single predictor of total posture was Angle II (trunk-hip) but adding Angle III (hip-knee-thigh) improved the prediction.

205. LAEDING, Lawrence. Assessment of the Difference in Power, Agility, Strength, and Reaction Time of Negro and White Male Subjects at the Tenth Grade Level. M.A. 1964. 55 p. (G. Mikles)
All male sophomores in Saginaw High School (except six who were not available) were tested on vertical jump, 30-ft. shuttle run, pull-ups, and reaction time. Subjects were divided into 15- and 16-year age groups; those over or under were eliminated, as were subjects of Mexican descent. The only difference at the .05 level was in favor of the Negroes

on the vertical jump.

206. MARINE, Eleanor. Age Trends in Heart Rate Values During And After Submaximal Work in Women 30-50 Years Old. M.A. 1964. 89 p. (J. Wessel)

Height, weight, and pubic skinfold measurements were taken on 10 women volunteers in each 5-year age group from 30 to 50. Heart rates were recorded before, during and 8 min. after a 3-min. step test at 24/min. on an 8-in. bench. Level of activity was estimated in four categories from light to very active on the basis of a questionnaire. Four-fifths of the subjects were under standard weight. Weight, percent fat, and fat free body weight were greatest in the 35-40 year group and progressively less in the two older groups. The youngest group had the fastest heart response to exercise and the most rapid recovery, but maximum heart rate during exercise showed no distinct age trend and no clear relationship to activity level. The correlation between maximum heart rate and weight was .214. Body weight and fat free body weight were highly correlated and subjects with the lowest fat free body weight had the fastest heart recovery rate.

207. SHADDUCK, Ione G. Self Concept of Appearance and Movement in Space: An Index for Fifth Grade Children. M.A. 1964. 66 p. (J. Wessel)

An SCPC Inventory was developed in pilot studies and administered to 105 grade 5 boys and girls. On the basis of scalogram analysis, split-half reliability projected with the Spearman-Brown Prophecy Formula, and coefficients of reproducibility, the 33 items for girls and 36 items for boys that met the Guttman criteria were retained and scaled on order of difficulty. The three sections concerned appearance, movement, and expression. The coefficients of reproducibility ranged from .89 to .93 for girls and .82 (low) to .91 for boys. Reorganizing the scaled descriptive traits into a simpler check list seemed desirable.

208. SIDWELL, Myrna Joy. An Investigation of the Influence of Three Different Physical Education Courses Upon Body Composition and Strength. M.A. 1964. 85 p. (J. Wessel)

Weight, girth, and skinfold measurements were taken 6 weeks apart on 42 freshman and sophomore women at Mount Holyoke College enrolled in weight training, calisthenics, or fencing classes. Although the groups were not matched initially, their mean weights were essentially the same. Caloric intake and expenditure records were kept by the subjects. Weight training showed a slight tendency to induce greater decreases in girths and skinfold measurements but none of the changes within or between groups was significant.

209. SINKS, Michael Gordon. The Longitudinal Effect of Progressive Overload on Speed and Accuracy in Baseball Pitching. M.A. 1964. 48 p. (W. Van Huss)

Two groups with seven freshmen pitchers in each served as subjects. The experimental group threw a weighted baseball for 20 min. on Mondays and Wednesdays for 6 weeks. Analysis of variance and Duncan's New Multiple Range Test showed significant differences between groups, individuals, and tests at the .01 point for both speed and accuracy. Practice with a weighted ball produced a significant increase in speed but a significant decrease in accuracy.

210. TEETER, Robert M. The Effects of Selected Variables on Honor Class Membership at Starr Commonwealth for Boys. M.A. 1964. 41 p. (H. Webb)

Starr Commonwealth is a private school and social agency for boys between grades 5 and 10 who have broken the law and have had problems in school but do not require remedial teaching or intensive psychiatric treatment and agree to remain until released. Each boy is placed in one of four honor classes with specific, ascending privileges on the basis of his social behavior, not grades. All boys in grades 9 and 10 served as subjects. Primary classification by honor class was compared with chi square at the .05 level with athletic participation (P = .20), IQ (P = .50), grade average (P = .50), and father's occupation (P = .70). The group was not a normal high school population in that all were emotionally disturbed. However, the independence of honor class from the other criteria for classification indicated that basing social privileges primarily on social behavior alone eliminated feelings of hostility and was the key to the astonishing success of Starr Commonwealth in rehabilitating boys.

211. TILIMAN, Thomas N. A Preliminary Study of the Measurement of Human Orientation Ability During Rotation. M.A. 1964. 58 p. (W. Van Huss)
An apparatus was built for rotating a subject 10 times in 20 sec. in one plane with the axis of rotation through his approximate center of gravity. A highly skilled gymnast who seemed innately skilled, a highly skilled gymnast whose skill seemed to result primarily from intensive training, and an individual with minimal experience in acrobatics or with rotation were used as subjects. The problem was to indicate by pressing a switch when the subject returned to his original orientation on each revolution. Two trials were given during which every attempt was made to force subjects to rely for orientation solely on cues from the semicircular canal. Both skilled gymnasts registered practically perfect records on both tests while the unskilled subject was consistently and grossly inaccurate. This suggested that orientation during rotation resulted primarily from practice rather than semicircular canal stimulation per se.

University of Michigan, Ann Arbor, Michigan (J. A. Faulkner)

212. MENZI, Elizabeth A. Physical Fitness: Its Relation to Social Adjustment, Social Acceptability, and Prestige and Its Place in the Value Systems of Grade 9 and 12 Girls of a Selected School System. Ph. D. in Physical Education. 1964. 126 p. (E. French)

213. MUNT, Marilynn R. Development of an Objective Test to Measure the Efficiency of the Front Crawl for College Women. M.A. in Physical Education. 1964. 42 p. (S. A. Howard)

214. PETERS, Gerald V. The Reliability and Validity of Selected Shooting Tests in Basketball. M.A. in Physical Education. 1964. 71 p. (J. A. Faulkner)

215. REIFF, Guy G. The Relationship of Physical Activity to Total Serum Cholesterol and Skinfold Fat in Adult Males. Ph. D. in Physical Education. 1964. 155 p. (H. J. Montoye)
Occupational and leisure physical activity records were collected by interviewing a 10 percent sample of adult males (N = 136) as part of the Tecumseh Community Health Study. Energy expenditure tables were developed for the activities and were used to determine total energy expenditure and 15 subtotals. Occupational energy expenditure for the last 3 months gave a good estimate of total annual activity. Physical activity had little predictive value for serum cholesterol, body weight, or body fat. More active males had lower systolic blood pressure and the relationship was independent of age.

216. RUFFER, William A. A Study of the Etiology of Extreme Physical Activity Patterns on Young Men. Ph.D. in Physical Education. 1964. 154 p. (P. A. Hunsicker)

Physical activity questionnaires and teacher assessment were used to select 50 highly active and 50 highly inactive boys in the same junior and senior high school grades. Anthropometric, motor performance, cardiovascular, subcutaneous fat, personality, and academic performance measures were collected along with information concerning availability of play areas, siblings, attitudes, parents, physical activity of parents, and other associated variables. Highly active students were more physically fit. Subjects scoring higher on the cyclothermic scale of the High School Personality Questionnaire were more likely to be highly active and those scoring higher on the schizothermic scale were more likely to be inactive. Encouragement of parents and especially the recreational activity of the male parents were significant factors in the etiology of extreme physical activity patterns.

Montana State University, Missoula, Montana (B. J. Sharkey)

217. FLYNN, Russell T. Kinesthetic Perception of Basketball Players During the Competitive Season. M.S. in Physical Education. 1964. 32 p. (W. Sinning)

218. LEEPER, Terry. Strength Decrement of Muscles While Back-Packing With Different Carriers. M.S. in Physical Education. 1964. 60 p. (W. Sinning)

219. LEWIS, Harley W. Validity and Reliability of Selected Runs as Measures of Cardiovascular Endurance. M.S. in Physical Education. 1964. 52 p. (W. Sinning)

220. MOLLER, Dennis O. Energy Expenditure While Back-Packing Carriers of Different Design. M.S. in Physical Education. 1964. 45 p. (W. Sinning)

221. POLO, John F., Jr. Strength Changes of Collegiate Wrestlers During Their Competitive Season. M.S. in Physical Education. 1964. 43 p. (W. Sinning)

University of New Mexico, Albuquerque, New Mexico (L. R. Burley)

222. ARATA, Paul F. A Comparison of Certain Sports Groups through the Air Force Physical Fitness Rating Test. M.S. in Physical Education. 1962. 35 p. (L. R. Burley)

Two hundred and ten Air Force athletes in 11 sports were tested. Analysis of variance showed a significant F and differences between groups were tested with t. The means for track and football differed significantly from those for golf, volleyball, softball, baseball, and bowling. Swimming differed significantly from the last four; basketball differed significantly from the last three, and judo differed significantly from the last two.

223. BARNEY, Robert K. Old Iron Head: A Short Biography of Roy William Johnson, Dean of New Mexico's Physical Education and Athletics. M.S. in Physical Education. 1963. 132 p. (L. R. Burley)

R. W. Johnson began as a poor but resolute and industrious young man in Grand Rapids, Michigan, was a scholar-athlete at the University of

Michigan, and served as an officer in France during World War I. Throughout over 40 years of work at the University of New Mexico, he initiated and developed what came to be respected programs in physical education and athletics. Dedication of the new physical education and athletic facility as Johnson Gymnasium provided a fitting tribute to his characteristic sacrifice and dedication.

224. CATON, Lewis Dale. A Study of the Relationship Between Intelligence Quotients and Physical Fitness Scores. M.S. in Physical Education. 1964. 39 p. (L. R. Burley)
The California Short-Form Test of Mental Maturity and the President's Council on Youth Fitness Tests were administered to 164 grade 9 boys at Carlsbad Mid-High School. The correlation between IQ and physical fitness was not significant.

225. CONLY, Andrew Glen. A Comparative Study of the Scholastic Achievement of Athletes and Nonathletes and Athletic Teams at the University of New Mexico. M.S. in Education. 1964. 39 p. (L. R. Burley)
Grade point averages of athletes who were on scholarships and/or had won letters were compared with those of a random sample of nonathletes in 1962-63. The nonathletes were superior but not significantly superior to the athletes at the .01 level. Mean grade point averages for athletes in physical education, arts and sciences, and business administration did not differ significantly at the .01 level but those in physical education differed significantly from those in University College. Grades of nonathletes in University College were significantly lower but those of students in the other three colleges did not differ significantly. Comparisons between teams showed the basketball players were highest (2.437) and the tennis players lowest (1.914) but no difference was significant. Differences between athletes in team and individual sports were not significant.

226. SCHUSTER, John Robert. A Study of the Effects of Social Stratification upon Leisure Activities of Junior High School Students in a Selected Albuquerque Area. M.A. in Recreation. 1964. 72 p. (L. R. Burley)
Questionnaires concerning school and nonschool leisure activities were administered to 205 of 1,139 male and female students stratified according to the occupation of the father by the NORC-North-Hatt Prestige Scale. Upper-middle class students participated more in curriculum guided clubs than in sports and dominated the Student Council and National Honor Society. Upper-lower class students participated more in sports activities. Average time per week in school sponsored extracurricular activities was less than 30 min. with boys' sports excluded and 1 hr. and 3 min. with boys' sports included. Nonschool activities and summer recreation were less stratified along class lines. Commercial recreation showed no stratification. Homework and music were stressed more in the middle class and TV viewing was more prevalent in the upper-lower class.

227. STOCKDILL, John Lee. A Study of Junior High School Boys' Physical Fitness Scores as Related to the Families' Socioeconomic Status, Size, and Type of Occupation. M.S. in Physical Education. 1964. 40 p. (L. R. Burley)
All boys in 12 physical education classes for grades 7, 8, and 9 (N = 490) were given the AAHPER Youth Fitness Test. Socioeconomic status of parents was determined from the rank of their occupation in the Detailed Classification of the Bureau of the Census, 1950, and family size was determined from school census cards. The correlation between physical

fitness and socioeconomic status of parents was too low for predictive purposes. The correlation between fitness and family size was not significant. Mean differences in fitness for boys whose parents were manual laborers or white collar workers and professional, managerial, sales, and craft workers were not significant.

New York University, New York City (R. A. Weiss)

228. DAVES, Marise. A Study of Practices Used by Women's Athletic Associations in Illinois Colleges to Conduct Extramural Sports Programs. Ed.D. 1964 (R. A. Weiss)

Twenty-four programs were surveyed by questionnaire. Guiding principles were developed, practices were appraised, and policies were established. The programs were in general strong. The weakest areas were publicity, officiating, balance of activities, accompanying social events, and standards for practice and participation time. Specific recommendations were made for improving these areas.

229. FRANK, Peggy Mary. Patterns of Recreation Administration in Relation to the Characteristics of Communities. E. D. 1964. (E. L. Ball)

Administrative patterns in selected communities with different characteristics were tested with chi square as a basis for recommendations for municipalities with similar characteristics. A primary recommendation was concerned with reconsidering and restructuring responsibilities to meet increasing needs for services by emphasizing advisory and consultive services, procuring and reallocating funds, interpreting the community's program and services, integrating with other community recreation resources, and developing and maintaining facilities for public use.

230. GOLDBERG, Jack. A Plan for Providing Resident Country Camp Services for the Jewish Population of Greater New York. E. D. 1964. (M. A. Gabrielsen)

231. HARDT, Lois J. An Investigation of Effecting Behavioral Changes through Recreation. Ph. D. 1963. (E. Ball)

Twenty-nine mentally retarded young adults were tested with a modification of the Vineland Social Maturity Scale before and after a 7-month program of adapted art, rhythms, swimming, bowling, dance, team sports, and simple games. Changes in actual behavior were noted and a Q-sort was used to measure changes in parents' concepts of their behavior. No significant differences were found by the Wilcoxon Matched-Pairs Signed-Rank Test between retardates' actual behavior before and after the program or between parents' concepts of and actual behavior either before or after the program.

232. PERSINGER, Staples. A Study of the Suitability of Selected New Jersey Colleges to Offer a Physical Education Major for Women. Ed.D. 1964. (R. A. Weiss)

State colleges at Glassboro, Jersey City, Newark, and Paterson were surveyed. Evaluation according to established criteria indicated that Glassboro State College was best suited for establishing a major professional program in physical education for women.

233. LONG, Ruth. A Guide for Teaching Small Craft Activities as Conducted in Camps, Schools, Teacher Training Institutions. E. D. 1964. (M. A. Gabrielsen)

234. SCHLEEDE, Joan. Comparative Effects of Isometric and Isotonic

Training Methods on Selected Physical Performance Tests with Women Physical Education Majors. Ed. D. 1964. (E. Lyne)
Three matched groups, each of 10 subjects, practiced three times a week for 6 weeks with either single isometric contractions, repeated isometric contractions, or selected isotonic exercises and were tested weekly for strength, endurance, and performance in the standing broad jump. Analysis of variance for repeated measures indicated that all three methods produced significant gains at the same rate on strength, endurance, and performance. No specific training method produced greater gains on any variable.

235. SMITH, Nettie D. A Study of First Year Teachers' Competence in Teaching Elementary Physical Education. Ed. D. 1963. 278 p. (G. Andrews)
A stratified random sample of 25 from 181 Newark State College graduates teaching for the first year in grades K through 6 were studied over a 6-week period. Competencies and practices were identified from the literature and approved by a jury of nine. Data were collected on 109 practices during two observations of each teacher, interviews with principals, and examination of teachers' diaries. Forty-eight problems were identified in relation to specific practices. The implications for teacher preparation were suggested.

236. VITALONE, Gabriel Edward. A Study of Certain Behavior Traits and the Physical Performance of a Selected Group of First Grade Children Participating in a Program of Movement Experiences. Ed. D. 1964. (G. Andrews)
Children in six grade 1 classes were rated in physical performance and general behavior—with a specially devised Behavioral Direction Scale—during October and June. Three classes had a program of movement experiences conducted by their teachers who participated in an inservice training program. The experimental group learned more skills, showed greater improvement, and included more children learning new skills than the control group. The experimental group also had more desirable, fewer undesirable, and 22 percent more children with increased behavioral direction scores than the control group. Behavioral direction changes were significant in two of the experimental classes from October to June.

237. WAGLOW, Irving Frederick. A Measurement and Evaluation Manual for the Department of Required Physical Education at the University of Florida. Ed. D. 1964. (R. A. Weiss)
Organic efficiency, skill or recreational development, mentally stimulating situations, and individual or group action were identified as the unique contributions of physical education to general student development. The literature was reviewed for available measurement materials. Principles were formulated for the program and a uniform grading plan was developed. A manual was developed covering measuring, evaluating, and grading in the various physical education activities.

North Carolina College, Durham, North Carolina (Ross E. Townes)

238. ALSTON, Dorothy J. The Physical Performance of High School Girls on Three Physical Fitness Tests. M.S. in Physical Education. 1964. 46 p. (R. E. Townes)
The Virginia Physical Fitness Test, AAHPER Youth Fitness Test, and North Carolina Physical Fitness Test were administered to 60 girls in grades 9, 10, and 11. The correlation between the Virginia and the

AAHPER tests was .89, between the AAHPER test and the North Carolina test .79, and between the two state tests .80. The mean differences of the three tests in standard score terms were not significant at the .01 level. The three tests gave essentially equivalent results for assessing the physical fitness of high school girls.

239. CHAMBERS, Samuel H. The Appraisal of the Attitudes of the Principal, Teachers, and Students Toward Physical Education as a Secondary School Subject. M.S. in Physical Education. 1964. 68 p. (R. E. Townes)
Teachers and students, unlike the principal, held a favorable attitude toward physical education as a secondary school subject. Teachers and students were aware of the importance of physical education in developing fitness. Activities which were liked by pupils and teachers were also the activities in which they desired instruction and in which they estimated their skills to be high.

240. DUDLEY, Marshall C. A Study to Determine the Relationship Between Motor Ability and Motor Fitness of Junior High School Girls. M.S. in Physical Education. 1964. 49 p. (R. E. Townes)
Ninth grade girls (N = 125) were classified according to McCloy's Classification Index and given the Newton Motor Ability Test and the Oregon Motor Fitness Test. The relationship between these two tests was .65. The difference between the mean performances was not significant. Instruments containing dissimilar components should be used in any comparative study of motor ability and physical fitness.

241. JOHNSON, Warner R. A Study to Determine the Physical Fitness of Women Students Enrolled in Service Courses at Allen University. M.S. in Physical Education. 1964. 46 p. (R. E. Townes)
The sample consisted of 100 women students enrolled in the 12W and 22W classes at Allen University. The Oregon Motor Fitness Test was used. The difference between the mean performance of these two groups was not significant. The first year students were superior to the second year class in all areas measured, with the exception of strength and endurance of the flexor muscles of the arms and shoulder.

242. HINES, Herman W. A Study to Determine the Attitudes of High School Students Toward Physical Education. M.S. in Physical Education. 1964. 56 p. (R. E. Townes)
The Wear Attitude Inventory and the Kappes Attitude Inventory were used. The students developed a higher esteem for physical education as they advanced from grade 10 to grade 12. The students felt that physical education made a contribution to their physical, mental, social, and emotional development.

243. MITCHELL, Thomas A. A Comparative Study of the Effectiveness of Isometric and Self-Testing Exercises in Developing Muscular Strength. M.S. in Physical Education. 1964. 36 p. (R. E. Townes)
The experimental and control groups consisted of 15 male subjects in grade 9. The two groups were matched by the McCloy Classification Index. The mean difference between the two groups was not significant after a 12-week period of experimentation.

244. WILLIAMS, Clarence F. A Study to Determine the Relationship Between Physical Fitness and Intelligence in the Mentally Retarded. M.S. in Physical Education. 1964. 48 p. (R. E. Townes)
There was a greater difference between the relationship of physical fitness and intelligence for educable and trainable boys than for educable

and trainable girls. The relationship was lower for educable females than for either trainable females or trainable males. These factors were positively correlated in the mentally deficient.

University of North Carolina at Greensboro, Greensboro, North Carolina (R. McGee)

245. CARSEY, Katharine Ann. One Among Us. M. F. A. in Dance. 1964. (V. Moomaw) (Labanotated)
One physical being inhabited by three separate and distinct personalities, each striving to become dominant, was the theme of the choreography for "One Among Us." Two actual case studies helped to formulate the movement idea. In both cases, the individual had three distinct and very different personalities. One personality was meek, withdrawn, sad, and depressed. The second personality was full of fun, cocky, flaunting, and flirtatious, almost a complete opposite of the first. The third personality was more sophisticated and responsible than the other two and seemed to be more aware of reality.

246. CLAYTON, Carolyn D. The Construction of a Series of 35mm Slides and Diagrams to Aid in the Study of Defensive Basketball for Girls. M. Ed. 1964. 64 p. (E. Griffin)
A series of 35mm slides, accompanied by diagrams, was developed to aid in the study of defensive basketball for girls and women with special reference to the roving player. The areas included were zone defense, interchange of players, full court press, jump ball defense, out-of-bounds defense, and rebounding the defensive goal.

247. COSGROVE, Elinor F. The Effects of a Free Exercise Course Upon the Kinesthetic Sense of the Limbs. M. S. in Physical Education. 1964. 71 p. (M. Riley)
Two groups of girls, aged between 12 and 14, were selected from the Curry School, Greensboro, North Carolina. The control group (10 students) and the experimental group (7 students) were given pre- and post-tests for kinesthetic sense of the limbs. In addition, the experimental group was rated for free exercise ability after 10 hourly lessons in free exercise. There was no relationship between the kinesthetic sense of the limbs and free exercise ability. Kinesthetic sense seemed specific to each segment of each limb.

248. CROWE, Patricia Barbara. A Comparison of the Difference Among Selected Sit-Ups with Regard to Strength. M. S. in Physical Education. 1964. 68 p. (M. Riley)
Thirty-one college students at Greensboro were divided into four experimental groups and a control group. Three experimental groups used various isometric and isotonic exercise programs for the abdominal musculature and the overload principle for 5 weeks. The fourth experimental group used one maximal 6-sec. contraction daily for 3 weeks. Strength was measured with a tensiometer. All programs increased abdominal strength significantly and all appeared equally effective. The findings were in disagreement with those of a previous electromyographic study concerning gravity factors, isotonic and isometric contractions, and assisting subjects during a sit-up exercise.

249. HONDA, Akiko. The Effects of Reaction-Movement Time on the Playing Ability of Intermediate Tennis Players. M. Ed. 1964. 47 p. (D. Davis)
Two intermediate tennis classes under the same instructor served as experimental and control groups to determine the effect of foot-work

exercises for shortening reaction-movement time on tennis playing ability. The wallboard test and reaction-movement test were administered before and after a 6-week exercise program for the experimental group. A statistically significant improvement in reaction-movement time resulted in favor of the experimental group but no significant difference in improvement occurred between the two groups on tennis playing ability as measured by the wallboard test.

250. RYAN, Mary P. The Effect of a Head Stabilizer on the Learning of the Golf Swing. M. Ed. 1964. 54 p. (E. Griffin)
Thirty-four beginning golf students in the required physical education program had 8 weeks of instruction in regular classes. In addition, 16 of them went through a sequence of swings in the head stabilizer without additional instruction. Motion pictures were taken of all subjects at the third, fifth, and eighth weeks. Their swings were rated by three experienced golf teachers. An analysis of variance on the ratings indicated that the head stabilizer had no effect on the learning of the golf swing during any of the three rating periods.

251. SLATTON, Yvonne L. The Philosophical Beliefs of Undergraduate and Graduate Physical Education Major Students and the Physical Education Faculty at the University of North Carolina at Greensboro. M. S. in Physical Education. 1964. 141 p. (G. Hennis)
Statements representing Aristonism, Realism, Pragmatism, Existentialism, and Idealism were prepared covering universe, man, values, competition, evaluation, professional responsibility, curriculum, principles, teaching methods, education, and learning. These were rated as to the philosophy represented by one education professor, one physical education professor, and two philosophy professors. Administration to the undergraduate, graduate, and faculty groups indicated that collectively the dominant pattern was eclectic. The three groups were primarily pragmatic in values, evaluation, curriculum, principles, and education. The graduate students also showed pragmatic tendencies in their view of man and professional responsibility. The graduate students tended to differ from the other two groups, who were similar.

252. STROBLE, Sharon Elizabeth. The Relationship Among Selected Measures of Physical Fitness, Body-Image, Self-Concept, Movement-Concept, and Selected Personality Traits of College Physical Education Majors with Low Physical Fitness Indices. M. S. in Physical Education. 1964. 84 p. (G. Hennis)
The Royal Canadian Air Force XBX program was practiced for 30 days by 12 women physical education majors with low scores on the Iowa Physical Fitness Test which included measures of abdominal, arm, and shoulder strength and endurance. The Q-Sort developed by Doudlah was used to measure body-image, self-concept, and movement-concept. Edwards' Personal Preference Schedule was used to measure achievement, autonomy, succorance, and personality endurance. The exercise program resulted in significantly increased physical fitness. Abdominal strength was significantly related to achievement. Increased physical fitness resulted in a more secure body-image and higher scores on the Q-Sort and Personal Preference Schedule.

253. TERGERSEN, Ruth L. The Relationship of Selected Measures of Wrist Strength, Vision, and General Motor Ability to Badminton Playing Ability. M. Ed. 1964. 57 p. (G. Hennis)
The French Short Serve and Clear Test and the Miller Wall Volley Test were given to 23 sophomore college women who had just completed a semester of badminton. Motor ability was measured with the Scott Test,

palmar and dorsal flexion strength with a tensiometer, temporal vision with a perimeter, and depth perception with the Howard-Dolman apparatus. Total badminton playing ability correlated significantly with general motor ability, depth perception, and peripheral vision. The wall volley test correlated significantly with motor ability and depth perception. The highest and lowest six players differed significantly in motor ability, depth perception, and peripheral vision but not in total wrist strength.

254. THORNHILL, Nancy Louise. "These Three Am I." M. F. A. in Dance. 1964. (V. Moomaw) (Labanotated)
"These Three Am I" was based on the emotional development of the individual. Each of the three sections interpreted a portion of the poem "Ulysses" by Alfred, Lord Tennyson. Section one sought to convey the effects of outside influences, social and environmental, upon the emotional development of the child. Section two dealt with the innter conflict of the young woman trying to choose between self-reliance and independence or the more traditional role of wife and mother. Moments in this section conveyed the peace of mind which the young woman also knew during this period of development. The final section, concerned with the woman in later life, communicated the vitality and luster of this emotional period. A tranquillity, based upon pleasurable reminiscences and a sound faith, enabled the matured woman to live rewardingly in the present and to look forward to death without fear.

255. WAGONER, E. Jeanne. The Construction of a Set of Check Sheets to be Used in Grading Physical Education Activities at Chatham Hall. M. Ed. 1964. 69 p. (E. Martus)

256. WERTZ, Delores Jean. A Comparison of Physical Education in Germany and America from the Year 1860 to 1930. M. S. in Physical Education. 1964. 82 p. (R. McGee)
Physical education in Germany and America from 1860 to 1930 were compared as reflections of political and social attitudes. The rich cultural heritage and the uneducated political attitudes of the Germans were strikingly different from the democracy and individualism which were creating a new culture in America. The broad American concept of physical education within education could benefit the Germans. America could gain from the pattern of the continuous bodily activity inherent in the German Leibeserziehung, and its more literal translation of "education of the body." Both countries had similar activities but different cultural backgrounds. They can share and enjoy what they have in common. They can respect and allow to stand that which is rooted in their own divergent backgrounds.

Ohio State University, Columbus, Ohio (D. K. Mathews)

257. CROWL, Lewis Clair. A Statistical Study of the Comparison and Increase in Vital Capacity Among Athletic Teams. M. A. in Physical Education. 1964. 42 p. (D. K. Mathews)
Little significant difference was noted among athletic groups. Vital capacity increased during the competitive season.

258. DORRIAN, John Edward. Pre-Dash and Post-Dash Vital Capacity Measurements of Junior High School Boys. M. A. in Physical Education. 1964. 23 p. (D. K. Mathews)
Following a 440-yd. dash, five vital capacity measurements were recorded. The difference between the pre- and post-dash vital capacity means was significant at 30 sec., and 1, 2, and 3 min. after the dash.

It was not significant at 4 min. following the dash.

259. LILLY, Ann Lee. A Method of Notating Synchronized Swimming Based on Principles Adapted from the Labanotation System. M. A. in Physical Education. 1964. 106 p. (M. M. Yost)
Labanotation, a system for recording dance movement, was a usable and accurate method of notating synchronized swimming when certain minor adaptations were made.

260. MARTIN, Frank Leon. Effects of a Ten Second Submaximal Isometric Contraction on Heart Rate, Blood Pressure, and Oxygen Consumption. M. A. in Physical Education. 1964. 33 p. (D. K. Mathews)
Due to increases in heart rate and changes in blood pressure, isometric programs may possibly contribute to the efficiency of the cardiovascular and respiratory systems.

261. MERCER, Harold Joseph. A Summary of the Research Related to the Effects of Diet on Athletic Performance. M. A. in Physical Education. 1964. 61 p. (L. A. Hess)
No safe nutrient was found that would enhance performance when the diet was balanced. Most common practices of coaches reviewed were not in agreement with scientific evidence.

262. POGUE, Thomas Molloy. The Energy Cost of Isometric Contraction of the Right Elbow Flexor Muscles. M. A. in Health Education. 1964. 19 p. (D. K. Mathews)
Forty experiments were run on 10 male subjects to determine the energy cost of isometric contraction of the right elbow flexor muscles. The mean net energy cost was 714 ml. of oxygen with a standard deviation of 186 ml. The energy expenditure was 11.6 kcal. per min.

263. SINGER, Robert Norman. Massed and Distributed Practice Effects on the Acquision and Retention of a Novel Basketball Skill. Ph. D. in Physical Education. 1964. 83 p. (L. A. Hess)
Three groups, each of 40 subjects, practiced the novel skill of bouncing the basketball off the floor and into the basket under massed and distributed practice conditions. Extreme distribution of practice was most effective for the acquisition of the skill while retention was favored by massed and relatively massed practice.

264. THEISS, Robert John. An Analysis, with Recommendations, of the Boys' Physical Education Program at the Secondary Level of the Olmsted Falls School District. M. A. in Physical Education. 1964. 86 p. (L. A. Hess)
The instructional and intramural programs were rated inadequate in many areas, while the interscholastic program received a satisfactory rating.

Ohio University, Athens, Ohio (J. G. Mason)

265. CULLUM, Margaret J. An Evaluation of the Required Program in Physical Education for Women of a State University. M. S. in Physical Education. 1963. 140 p. (W. K. Miller)
Data were obtained by administering the Cordts and Shaw (1960) questionnaire to 144 sophomore women who had completed three semesters of required physical education and to the physical education for women faculty. The returns were analyzed in terms of philosophy and objectives, administration, program, and evaluation. The general program compared

favorably with programs in state coeducational institutions surveyed by Cordts and Shaw. The students considered the program valuable. Criteria from the 1954 Washington Conference on Physical Education for College Men and Women, supported by student and staff opinion, indicated that the primary weaknesses were inadequate facilities, insufficient variety in course offerings, and the limited number of instructors.

266. DEAL, Mary Susan. An Instructor's Guide for Women's Gymnastics on Selected Apparatus and in Floor Exercise. M.S. in Physical Education. 1965. 110 p. (W. K. Miller)
Beginning, intermediate, and advanced gymnastic skills for balance beam, uneven parallel bars, and floor exercise were derived from all available literature on gymnastics for women and selected material for men. The specific skills were analyzed and illustrated with drawings. General and competitive evaluation standards were developed with the assistance of three women physical educators who were expert in gymnastics.

267. SMITH, Beverly A. An Investigation of the Effectiveness of Two Conditioning Programs in Reducing the Number of Injuries in Women's Intercollegiate Basketball. M.S. in Physical Education. 1964. (W. K. Miller)
Members of the 1963-64 Ohio University women's intercollegiate basketball team were divided into two equated groups of 10 each on the basis of a physical efficiency index derived from Clark's modification of the Harvard Step Test administered on the first day of practice. This test was repeated at the end of the season and a complete history was kept of all injuries. One group used the Royal Canadian Air Force XBX plan as a conditioning program throughout the season and the other group used a conditioning program devised by the author. Both programs appeared equally effective for conditioning and minimizing injuries sustained in intercollegiate basketball. The conditioning programs kept injuries minimal.

University of Oregon, Eugene, Oregon (E. R. Reuter)

268. CARNER, Julia. A Study of the Influence of the Philosophy of the Church of Jesus Christ of Latter-day Saints on Physical Education in the Church Schools. Ph.D. in Physical Education. 1964. 176 p. (F. Dougherty).
The Bible, Book of Mormon, Doctrine and Covenants, Pearl of Great Price, and published writings and discourses of the Presidents of the Church were examined to determine the philosophical orientation to the processes and objectives of education and physical education. A set of standards was defined and physical education programs, facilities, and staffs at eight schools were surveyed and evaluated. Church philosophy influenced physical education implicitly rather than explicitly. The programs, facilities, and staffs at Ricks College and Brigham Young University provided programs consistent with Church philosophy but physical education practices in elementary and secondary schools were inconsistent with Church philosophy.

269. COEFIELD, John R. Relationships Between the Academic Achievement and Maturity, Physical, and Personality Measures of Twelve-Year-Old Boys in the Sixth Grade. Ed.D. in Physical Education. 1964. 161 p. (H. H. Clarke)
The Stanford Achievement Test, Otis Quick Scoring Mental Ability Tests, and tests of maturity, physique type, body size, strength, motor ability, level of aspiration, personality, and interest were administered and

grade point averages were obtained on 158 12-year-old boys in grade 6. Special analyses were made with Rogers' Law formulas which correlated .917 with each other. Correlations with scholastic achievement by the Stanford Test (significant at the .05 level) were found with endomorphy (negative), mesomorphy (negative), ectomorphy, Wetzel physique channel, Rogers' General Learning Capacity formula, Mental Health Analysis, and some subsections of the California Psychological Inventory. The standing broad jump and Rogers' General Learning Potential formula correlated significantly with grade point average. Partialling out IQ reduced the correlations. The PFI correlated .946 with general learning potential and .896 with general learning capacity.

270. CROSS, John A. Attitudes Toward Physical Education of Male Students Entering the University of Oregon. M.S. in Physical Education. 1964. 43 p. (W. Brumbach)

271. EBURNE, Norman C. The Effect of Weight Training on Performance in Middle-Distance Running. M.S. in Physical Education. 1964. 47 p. (W. Brumbach)

272. GOTTESMAN, Donald T. Relationships Between Cattell's Sixteen Personality Factor Questionnaire and Physique, Structure, Strength, and Motor Traits of College Men. Ph.D. in Physical Education. 1964. 166 p. (H. H. Clarke)

Cattell's 16 PF Test and 27 physique, structure, strength, and motor tests were administered to 94 University of Oregon freshman males enrolled in required physical education classes. The correlations between personality factors and physical measures were mostly insignificant. The highest R of .587 was between Factor G, general intelligence, and ectomorphy, endomorphy (negative), and standing height. Significant correlations with physical tests were found for Factors F (surgency), G (character), I (premesia), M (antia), N (shrewdness), and Q1 (radicalism). The physical tests showing the most and best correlations with personality factors were 160-yd. shuttle run, PFI, pull-ups, jump and reach, Rogers' arm strength, and push-ups on the parallel bars.

273. GREENE, Walter G. Peer Status and Level of Aspiration of Boys as Related to their Maturity, Physique, Structural, Strength, and Motor Ability Characteristics. Ed.D. in Physical Education. 1964. 259 p. (H. H. Clarke)

Two groups, totaling 279 randomly selected elementary school boys (age 7-10, and 9-12 years) were tested annually for peer status by sociometry, level of aspiration with a grip strength routine, and with 12 maturity, physique, structural, strength, and motor tests. R's with sociometric criteria were under .485. Most significant correlations between sociometric and physical tests by age groups occurred at age 10 and above, with standing broad jump, PFI, average cable-tension strength, and 60-yd. shuttle run involved most frequently. Division into high and low groups on each of the five sociometric categories again showed higher relationships among the older boys and mean differences in favor of the high groups for standing broad jump, average cable-tension strength, mesomorphy, PFI, and 60-yd. shuttle run. Some significant correlations were obtained between level of aspiration and skeletal age, body weight, standing height, upper arm girth, and average cable-tension strength.

274. JORDAN, David B. A Longitudinal Analysis of the Mental Health of Boys Age Fifteen to Seventeen Years. M.A. in Physical Education. 1964. (H. H. Clarke)

Mental Health Analyses and tests of body size, physique, strength, motor ability, and maturity were administered annually to 58 boys aged 15 through 17 years. Inter-age correlations for 12 of the 13 mental health scores ranged from .577 to .865 with the highest correlations between adjacent ages. Twenty-four correlations between mental health measures and the other tests were significant and 17 of the significant correlations occurred at age 15. Average cable-tension strength showed the most significant correlations with mental health, followed by body weight and standing broad jump. None of the 30 comparisons between high and low mental health groups on the test variables over the 3-year period were significant.

275. MacINTOSH, Donald D. The Relationship of Individual Differences and Subsequent Changes in Static Strength with Speed or Forearm Flexion Movements. Ph.D. in Physical Education. 1964. 99 p. (H. H. Clarke)

University freshmen (N = 91) were assigned randomly to a control group or experimental groups practicing elbow flexion at maximum speed, isometric exercises for the elbow flexors, or isotonic exercises for the elbow flexors for 8 weeks. Low positive correlations between static strength and speed of elbow flexion were significant at the .01 level but, with one exception, correlations between strength and the mass moved or between changes in speed of elbow flexion and changes in strength or strength/mass were not significant. Correlational and covariance analyses indicated that increasing strength did not increase the speed of forearm movement. The isotonic training program produced significantly greater gains than the isometric program.

276. MUNROE, Richard A. Relationship Between Somatotype Components and Maturity, Structural, Strength, Muscular Endurance, and Motor Ability Measures of Twelve-Year-Old Boys. Ed.D. in Physical Education. 1964. 190 p. (H. H. Clarke)

Somatypes (Sheldon), skeletal ages, and 10 body, three structural index, five strength, three muscular endurance, and four motor ability measures were obtained from 207 boys at age 12. Endomorphy and mesomorphy were positively and ectomorphy negatively associated with skeletal age. Single anthropometric measures lacked sufficiently high correlation with somatotype components to warrant their prediction but the ponderal index correlated .964 with ectomorphy. Endomorphy correlated highly with body bulk when linear measures were partialled out; ectomorphy was highly related to linearity when body bulk measures were partialled out, and mesomorphy was related especially to large trunk and short legs. The partial correlations also indicated that the strength of endomorphy was derived mainly from body bulk; the strength of mesomorphy was independent of body size, and ectomorphy generally lacked strength, but gross strength and muscular endurance were not highly related to somatotype. Regression equations were computed where r's or R's were of sufficient magnitude for prediction.

277. PHILLIPS, Donovan J. The Effectiveness of Land-Drill Exercise in Teaching Young, Male Children to Swim. M.S. in Physical Education. 1964. 73 p. (W. Brumbach)

278. STRATTON, Stephen T. The Reliability of Level of Aspiration Scores and Their Relationship to Measures of the Growth and Development of Eleven-Year-Old Boys. Ed.D. in Physical Education. 1964. 121 p. (H. H. Clarke)

Level of aspiration measures were obtained from a grip strength test pattern and measures of maturity, body size, strength, motor ability, interests, peer status, and scholastic achievement were administered to 9- and 11-year-old boys. The most reliable aspiration measures were second aspiration discrepancy, average aspiration discrepancy, and average variability of discrepancy, but experience in aspiration testing and maturity caused a significant reduction in these measures. The boys who came closest to having common interests with their peers set their aspiration level above their ability level. Boys with high grip strength showed significantly greater variance in the difference between aspiration and ability than boys with low grip strength. Aspiration as measured had no marked relation to growth and maturity. The second aspiration discrepancy was the most significant, reliable, and meaningful of the measures investigated.

279. WHITEHILL, M. Patrick. The Effects of Variations of Mental Practice on Learning a Motor Skill. M.S. in Physical Education. 1964. 61 p., (W. Brumbach)

280. WIDNESS, Joanne H. Simplification of the Rogers Strength and Physical Fitness Indices for Junior High and Senior High School Girls. M.S. in Physical Education. 1964. 53 p. (H. H. Clarke)
Data from junior and senior high school girls both gave R's of .98 and above between the Strength Index and leg-lift, arm, and back-lift strengths. Multiple regression equations were computed for predicting the Strength Index so that existing norms could be used in obtaining the PFI.

281. WILLEE, Albert W. Factor Analysis of Potential Maturity Indicators of Nine-Year-Old Boys. Ph.D. in Physical Education. 1964. 117 p. (H. H. Clarke)
Fifty-four anthropometric, body form, strength, and motor ability tests were correlated with the skeletal age of 82 9-year-old boys. The 26 tests that correlated significantly with skeletal age were intercorrelated and factor analyzed by the principal axes methods. The attempt to locate a general maturity factor for preadolescent boys was unsuccessful. Principal Axes Factor I had the highest loading (.64) for skeletal age but this loading, although significant, was not high enough to warrant prediction. Varimax rotation located five factors: height, ectomorphy-endomorphy, leg strength, relative lung capacity, and grip strength.

Pennsylvania State University, University Park, Pennsylvania
(E. A. Gross)

282. FARR, Jane Frances. The Relative Effectiveness of Predicting Academic Success in College from Subjects Taken While in High School. M.S. in Physical Education. 1964. 55 p. (J. D. Lawther)

283. GROMMETT, Glenn Clifford. The Effect of Time on the Strength of a Psychic Stressor. M.S. in Physical Education. 1964. 60 p. (E. A. Gross)

284. HUFFMAN, Virginia Mae. An Analysis of Balance in Children in Progressive Age Groups. M.S. in Physical Education. 1964. 86 p. (J. D. Lawther)

285. KELLY, Thomas W. The Relative Effects of Isotonic and Isometric Training on Isotonic and Isometric Strength. M.S. in Physical Education. 1964. 73 p. (J. D. Lawther)

286. LELAND, Carolyn. The Effect of the Menstrual Cycle on All-Out Performance of Short Duration. M.S. in Physical Education.

1964. 71 p. (L. I. Magnusson)

287. MOREHOUSE, Chauncey A. Development and Maintenance of High Strength Levels with Isometric Contractions. Ph. D. in Physical Education. 1964. 133 p. (J. D. Lawther)

288. PETRO, Ronald J. The Effects of Imagery on the Learning of a Novel Motor Skill. M. S. in Physical Education. 1964. 73 p. (E. A. Gross)

289. RIVENES, Richard Sven. Multiple-Task Transfer Effects on Perceptual Motor Learning. Ph. D. in Physical Education. 1964. 74 p. (J. D. Lawther)

290. RYALS, Emily Stewart. The Development of Endurance in Adult Women. M. S. in Physical Education. 1964. 91 p. (J. D. Lawther)

291. SCANNELL, Robert J. Transfer in Accuracy Training When Difficulty Is Controlled by Varying Target Size. Ph. D. in Physical Education. 1964. 124 p. (J. D. Lawther)

292. THOMPSON, James George. Relative Effects on Physical Condition of a Regular Weight Training Program and a Specially Designed Conditioning Program. M. S. in Physical Education. 1964. 65 p. (J. D. Lawther)

293. WEILAND, Walter E. The Effects of Varying Isotonic Exercise Rates on Muscular Force Changes and on Strength Development. Ph. D. in Physical Education. 1964. 115 p. (E. A. Gross)

Sacramento State College, Sacramento, California (D. R. Mohr)

294. BEVINGTON, Boyd M., Jr. A Brief History of the California Project on Fitness, 1955-1962. M. A. in Physical Education. 1964. 105 p. (H. H. Wolf)

295. COLBY, Marygrace. A Survey of Women's Physical Education Service and Recreation Programs in Selected Colleges and Universities in California, With Recommendations to Develop a Program at a Private University. M. A. in Physical Education. 1964. 117 p. (F. B. Jones)

296. DE LA CRUZ, Inez. Physical Education Grading in the Senior High Schools of the Grant Union High School District. M. A. in Physical Education. 1964. 174 p. (B. Bartee)

297. DICKEY, Dwight Richard. The Development of a Suggested Administrative Guide for the Athletic Program at Boise Junior College. M. A. in Physical Education. 1964. 92 p. (A. A. Bates)

298. KEESHAN, Catherine Shannon. A Survey of the Health Behavior of Girls in Grades Seven Through Twelve in the Dixon Unified School District. M. A. in Health. 1964. 94 p. (F. B. Jones)

299. LEONARD, Ronald E. An Evaluation of Selected Physical Education and Athletic Activities in the Junior and Senior High School as Determined by a Survey of Opinions of Medical Doctors in Sacramento County. M. A. in Physical Education. 1964. 121 p. (A. A. Bates)

300. THOM, Helen. A Study of Time and Cost Spent by School Nurses in Placer County. M. A. in Health. 1964. 131 p. (F. B. Jones)

301. WHITENECK, William D., Jr. A Revision of the Physical Fitness Test for High School Boys in the Sacramento City Unified School District. M. A. in Physical Education. 1964. 41 p. (A. A. Bates)

302. WILEY, Jack F. A Cinematographic and Mechanical Analysis of the Backward Somersault with a Double Twist in Tumbling. M. A. in Physical Education. 1964. 66 p. (F. B. Jones)

San Diego State College, San Diego 15, California (W. D. Ross)

303. CARTER, Thomas Frances. The Procedures Employed in the Production of the Film "Fundamental Football Drills." M. A. in Physical Education. 1964. 49 p. (P. Governali)

A 15-min., black and white film, with sound applied by a magnetic sound strip method, was produced as a teaching aid for instruction in fundamental football skills for high school boys. The film contains six offensive and five defensive drills for the backfield and four offensive and six defensive drills for the linemen.

304. DUKE, Joe Webber. A Training Film on the Basic Moves of the T-Formation Quarterback. M. A. in Physical Education. 1964. 86 p. (P. Governali)

A 12-min. 16mm black and white training film was produced for young quarterbacks and inexperienced coaches as an instructional aid in teaching a basic series of plays used by T-formation teams in San Diego County. The film illustrates hand position, body position, stance, movement in a semicrouched position, and the steps necessary to run the dive, dive-counter, trap, quick pitch, quick trap, pitch left, power, sweep, inside belly, and the outside belly.

305. FLAHERTY, Bernard Charles. The Effect of Weight Training on Selected Baseball Skills. M. A. in Physical Education. 1962. (P. Governali)

An analysis of covariance technique was used to compare changes in selected baseball skills of 36 varsity and junior varsity baseball players, 18 of whom served as an experimental group undergoing a 6-week weight training unit against a similar number of players who served as a control. The experimental group showed significant improvement in home to first and accuracy throw measures. Differences in favor of the experimental group in bat head speed by cinegraphic comparison and distance throw were not significant. Analysis showed the groups to be noncomparable on a circle bases test.

306. HATTER, Gilbert John. Physical Fitness: A Comparative Study. M. A. in Physical Education. 1964. (P. Governali)

Physical fitness test scores obtained on 128 students at San Diego Military Academy were compared with national, state, and local norms by use of chi square with significance determined at the 5 percent level of confidence. Of 30, six age-test comparisons favored the Academy over national norms, one did not. In five the Academy performance was less than state norms and one exceeded state norms. In five of 15 possible comparisons, the Academy performance was less than San Diego City School norms. A physical education program to complement the military program of the San Diego Military Academy was recommended.

307. HENDRY, Willoene. Individualized Physical Education at San Diego City College. M.A. in Physical Education. 1964. 92 p. (D. Tollefsen)
Following analyses of medical excuses for a 2-year period, a proposed individualized physical education program for San Diego City College was designed for utilization of recommendations of referring physicians. Two hypothetical cases were presented to show in detail how referral forms which were developed would be used.

308. HEUBACH, Philip Gilbert. A Survey of the Smoking Habits and Attitudes of High School Seniors. M.A. in Health Education. 1964. 143 p. (A. Kitzinger)
A questionnaire was developed from pilot studies and was submitted to 652 seniors enrolled in social studies classes of the Will C. Crawford High School of the San Diego Unified School District. Data from 605 usable questionnaires revealed information on students' smoking history, characteristics that distinguished smokers from nonsmokers, and students' attitudes regarding smoking.

309. McSWEEN, Ruth Anne. An Investigation of Staff Utilization in Physical Education. M.A. in Physical Education. 1963. (M. Murphy)
A survey of pertinent literature was made regarding the use of staff with respect to teacher teams and the employment of teacher aides. Organizational patterns, curriculum design, and conclusions as to team teaching in San Diego were described. Apparent advantages of team teaching in physical education warranted further investigation of this approach.

310. PARTCH, Andrew F. A Comparative Study of Varsity Lettermen and Non-Lettermen Graduates of San Diego State College from 1936 through 1940. M.A. in Physical Education. 1963. (P. Governali)
A questionnaire was used to obtain information regarding social class of graduate lettermen, and a systematically selected sample of nonlettermen (56.1 percent response) was compared. Of the 33 lettermen, 18 were associated with the field of education, and of these 10 were in administrative or supervisory positions. Social mobility findings indicate that the average letterman came from a family with a lower middle class background, and the average nonletterman came from a family with an upper middle class background. At the time of the survey both were in the upper middle class.

311. PERPICH, Charles. A High School Interscholastic Competitive Gymnastics Survey of Selected Areas in the United States. M.A. in Physical Education. 1964. 169 p. (C. W. Benton)
A jury of experts was selected to establish criteria for evaluating competitive high school gymnastic programs. Questionnaires were sent to directors of physical education and athletics in 35 selected districts from 12 different states representing major geographical areas in the United States. Responses from 32 directors indicated that 14 districts had a competitive gymnastics program, 18 did not. Data from the 14 districts having competitive gymnastics were analyzed and findings and jury recommendations were related to the San Diego City Schools competitive gymnastics program.

312. POVENMIRE, Goldie Stewart. Food Intakes of High School Seniors Related to Attendance, Scholastic Ability, Academic Achievement, and Extra-Curricular Activities. M.A. in Health Education. 1963. 59 p. (W. H. Lauritsen)

Comparisons were made of 4-day-recall diets of 16 selected groups of high school seniors (78 boys and 55 girls) with the highest and lowest records in (a) school attendance based on a 4-year record, (b) scholastic ability by Henman-Nelson Tests of Mental Ability, (c) academic achievement indicated by a 4-year G. P. A. in relation to Henman-Nelson scores, (d) extra-curricular activities indicated by school annuals and teacher reports. The "Basic-Seven Food Guide" served as a standard for kinds and amounts of food required for a balanced diet. In regard to attendance, scholastic ability, and academic achievement, all boys' groups with the best records showed larger intakes from all food classes (milk excepted) than groups with poor records. Dietary adequacy was more varied for the girls.

313. QUAST, Ronald Vincent. A Study of the Growth of Wrestling in the High Schools of Southern California Since 1956. M. A. in Physical Education. 1964. 100 p. (H. H. Broadbent)

A questionnaire was sent to 346 member schools of the California Interscholastic Federation representing the San Diego Section, the Southern Section and the Los Angeles Section; 63 percent responded with 52 percent of respondents having a competitive wrestling program. Comparison of data obtained from this and previous studies indicated a growth of the sport of wrestling. A 300 percent increase in participation over and above school growth was noted. Three of every four respondents offered some type of wrestling with 60 percent of the respondents having qualified coaches compared to 40 percent in 1963.

314. ROBBINS, Carl Lee. Development of a Weight Training Program for Boys in the San Diego City Junior High Schools. M. A. in Physical Education. 1964. 98 p. (C. W. Benton)

A weight training program was developed for junior high school boys. Attention was given to a method of grouping students, stations, and exercise sequences; to the starting weights; and to a loading plan. A teaching unit plan was presented as a guide for conducting this activity in San Diego city junior high schools.

315. SCHIMPF, Lawrence Vincent. Development of a Weight Training Program for Boys in the San Diego City Senior High Schools. M. A. in Physical Education. 1964. 90 p. (C. W. Benton)

A weight training program was developed for senior high school boys. Attention was given to a method of grouping the students, selection of exercises to increase upper body strength and overall fitness, maximum weights for each selected station, and a loading plan. A teaching unit plan was presented for conducting this activity in the San Diego city senior high schools.

316. SMITH, Dolores I. Curriculum Guide for Seventh and Eighth Grade Girls' Physical Education in the Cajon Valley Union School District. M. A. in Physical Education. 1964. 287 p. (L. A. Harper)

A detailed physical education curriculum guide for a specific school district was developed according to selected criteria for a good physical education program for girls aged 12, 13, and 14. The guide includes a suggested yearly schedule of activities. For each recommended activity it includes material on history, values, court or field diagram, equipment, brief explanation of rules, definition, skills for the seventh and eighth grades, drills for teaching the skills, suggested skill tests, and selected references.

Smith College, Northampton, Massachusetts (E. E. Way)

317. ANDERSON, Dorothy D. Visual Aids for Dance Education. M.S. in Physical Education. 1964. 111 p. (E. Way)
The three general areas covered included the selection and use of visual aids, available materials currently in use, and the construction of visual aids. The thesis contained compilations of unbound still pictures, dance books containing illustrative materials, and ballet and modern dance films.

318. CHERNY, Audrey J. An Experimental Study of the Effect of Training on Kinesthetic Positioning. M.S. in Physical Education. 1964. 50 p. (E. Way)
Twenty-eight college women were given the initial test, 5 weeks of training, and the final test. Four tests of kinesthetic positioning from Young's battery were used. Subjects were consistently more accurate in positioning arms than legs. Training significantly improved the subjects' ability to raise the arms to a sideward position of 90°.

319. LORD, Patricia Anne. The Relationship of Sociometric Status and Athletic Ability in Eighth and Twelfth Grade Girls. M.S. in Physical Education. 1964. 68 p. (E. Way)
Each subject was asked to write the names of the five people with whom she would prefer to associate. The social position of each member of the two groups was obtained by pooling the opinions of all in her group. Athletic ability was measured by the Scott Motor Ability Test. Little or no relationship between sociometric status and athletic ability was found in the results from the two grades.

320. GRAVES, Sally Ann. Cinematographical Analysis of the Vertical Jump. M.S. in Physical Education. 1964. 70 p. (E. Way)
Ten skilled and 10 nonskilled vertical jumpers were photographed. The degress of motion occurring at the hip, knee, and ankle joints were measured, and the time relationships were noted. The only item which differentiated between the skilled and nonskilled groups was the height of the jump—the factor used to select the groups in the first place. The most common order of extension was knee, ankle, hip. The size of the crouch was not an important factor in determining the height of the jump.

321. MEADOWS, Jo Ann. A History of the Eastern Association for Physical Education of College Women, 1910-1963. M.S. in Physical Education. 1964. 165 p. (E. Way)

322. ODALE, Helen Gay. A Study of the Relationship Between Selected Foot Measures and the Vertical Jumping Ability of College Women. M.S. in Physical Education. 1964. 65 p. (E. Way)
Sixty-seven women took the Belt Jump Test and the Sargent Jump Test. A leap-meter was used to measure the jumps. The left foot of each subject was measured with a specially constructed instrument. Little or no relationship was found between vertical jumping performance and the selected foot measures, combination of selected foot measures, or total foot length. The use of the arms had no effect on the relationship between the foot measures and vertical jumping ability. The significant difference between the means of the two vertical jumping tests indicated a positive effect of the arms on performance.

323. WELLS, Christine L. A Comparison of Two Dynamic Strength Training Programs. M.S. in Physical Education. 1964. 119 p. (E. Way)

Two experimental groups completed 4 weeks of training with progressive resistance exercise. Subjects in group A used the DeLorme boot; group B used the bicycle ergometer. Group B work loads were calculated to correspond to the work load which would have been performed with the DeLorme technique. Significant strength gains resulted from both programs. Retention of strength gains was the same. Group A had significant strength gains in the non-exercised leg. Group B gained significantly more strength in the initially weaker leg than in the initially stronger leg (work loads were computed on the basis of weaker leg scores).

South Dakota State University, Brookings, South Dakota
(G. E. Robinson)

324. BONDHUS, Leland M. Football Training Film for Offensive Line Blocking. M. S. in Physical Education. 1964. 33 p. (S. Marshall)

325. EISCHENS, Roger R. The Development of a Football Training Film and Manual of the Five-Four Defense. M. S. in Physical Education. 1964. 63 p. (S. Marshall)

326. GUELLE, Dwain D. The Relationship Between Muscular Strength and Predicted Academic Success Among Selected College Freshmen Male Students at South Dakota State University. M. S. in Physical Education. 1964. 31 p. (G. E. Robinson)

327. JEPPSON, Gordon D. A Comparative Study of Selected Personality Traits of Varsity Athletes. M. S. in Physical Education. 1964. 50 p. (G. E. Robinson)

328. McKAY, Michael B. Skill Evaluation of Majors in Physical Education. M. S. in Physical Education. 1964. 57 p. (A. C. Bundgaard)

329. PEARSON, John D. Stair-Running as a Training Method. M. S. in Physical Education. 1964. 25 p. (M. T. Woodall)

330. RECTOR, Larry G. The Effect of an Isometric Training Program on the Speed of Selected Leg Movements. M. S. in Physical Education. 1964. 27 p. (M. T. Woodall)

University of South Dakota, Vermillion, South Dakota (J. B. Van Why)

331. HODAM, William F. A Comparison of the Scholastic Achievements of the Varsity Athletes with the Scholastic Achievements of All Students at the Aurelia Community School at Aurelia, Iowa, from 1954 to 1963 Inclusive. M. Ed. in Physical Education. 1964. 49 p. (J. B. Van Why)

332. KESSINGER, Ted K. A Survey of Physical Education Programs in Class "A" High Schools in South Dakota. M. Ed. in Physical Education. 1964. 61 p. (J. B. Van Why)

333. WOOD, Tage A. A Survey of Dance Programs in Required Physical Education Classes in Institutions of Higher Learning in the Central District Association for Health, Physical Education, and Recreation. M. Ed. in Physical Education. 1964. 68 p. (J. B. Van Why)

University of Southern California, Los Angeles 7, California

(J. M. Cooper)

334. DEATHERAGE, Dorothy. Factors Related to Concepts of Sportsmanship. Ed. D. in Physical Education. 1964. 320 p. (E. Metheny)

The Action-Choice Test for competitive sport situations, temperament survey, and study of values were given to men and women physical education majors, elementary education majors, and students. In terms of approved answers on the sportsmanship test, women tended to score higher than men with both groups of women majors the highest; men with high masculinity scores and women with low economic value scores were significantly higher than their low masculine and high economic value counterparts; and men with high masculinity and personal relations scores were highest but men with high social value scores were lowest. The greatest differences of opinion concerned opponent relationships, intentional, and unintentional rules violations.

335. FISHER, Anita. Factors Identified with Positive and Negative Attitudes Toward Physical Education. Ed. D. in Physical Education. 1964. 222 p. (E. Metheny)

A sample of college freshman women were surveyed with the Wear Inventory and with questions concerning other factors which possibly influenced their attitude toward physical education. Attitude was significantly correlated with frequency of participation, amount of dance experience, participation in athletic activities, self-rating of ability, measured skill in team sports, first semester grades in college, liking for school, opinions about physical education at various grade levels, interest in team sports and learning new activities, higher grades in high school, expected benefits, health, beliefs concerning benefits for health and physical fitness, and frequency of regular and severe dysmenorrhea. Although many factors were related to attitudes, no single factor or group of factors had appreciable predictive value.

336. JOHNSON, Joan. The Effect of Selected Conceptualizing Techniques Upon the Early Learning of a Gross Movement. Ph. D. in Physical Education. 1965. 119 p. (A. Lockhart)

Four groups learning a gross movement task showed appreciable improvement with actual practice, written verbalization, spoken verbalization, and conceptualization (or mental practice). Actual practice was significantly superior to written verbalization and conceptualization but not significantly superior to oral verbalization (or being interviewed about the performance). Oral verbalization was not significantly better than written verbalization of conceptualization. However, the other three methods seemed a desirable supplement to actual practice.

337. LAWRENCE, Trudys. An Appraisal Instrument for the Evaluation of the Emotional Health of Junior High School Pupils. Ph. D. in Physical Education. 1964. 270 p. (L. Smith)

The "Getting Along" test for grades 7, 8 and 9 was constructed with Forms A and B having 45 illustrated situation-response items with multiple choice answers concerning getting along with one's self, others, and one's environment. Most of the items were highly reliable. Higher raw scores, intelligence quotients, and reading ability scores for girls justified making separate norms. The average scores for each sex increased in successive grades although the high and low scores remained about the same. The correlations with IQ were .50, .47, and .42; correlations with reading achievement were .40, .37, and .40. IQ and reading achievement were higher in schools of high socioeconomic level but the social adjustment ratings by teachers and vice-principals showed no relation to socioeconomic level. These ratings showed a generally high chi square relationship with the test.

338. PURDY, Bonnie Jean. The Effect of Number of Practice Trials in Initial Learning on Retention and Relearning of Motor Skills. Ph. D. in Physical Education. 1964. 232 p. (A. Lockhart)
Groups had 20, 30, or 40 initial trials on unfamiliar, sport-oriented problems and were retested after one month for retention and relearning on maze time, maze errors, balance board, lacrosse, and foot volley tests. The 40-trial group was significantly better in original learning than the 20-trial on balance board and than the 30-trial on lacrosse skill; the 20-trial group was significantly better than the 30-trial on foot volley. All groups showed high retention in either absolute or relearning terms after one month and differences between groups were insignificant. Differences between groups in original learning were apparent during relearning. The average saving for all tests was 84.5 percent when the criterion was one trial equal to the final original performance and 65.6 percent when the criterion was two successive trials equal to the final original performance.

339. STITT, Elizabeth Ann. The Effects of Competitive Type Incentives Upon the Learning and Performance of Gross Motor Tasks. Ph. D. in Physical Education. 1964. 270 p. (A. Lockhart)
Groups of junior and senior high school girls of high and low motor ability learned three new gross motor tasks under individual, class, school, and no competitive incentive conditions. Individual and class incentives produced better performance than no specific incentive in two motor tasks at both school levels but the school incentive was equal to no incentive in all groups. The high and low ability groups at the junior high school levels generally maintained their initial relative performance position under individual, class, and no incentive conditions but the school incentive increased the differences between the high and low groups. Performance at the senior high school level under incentive conditions tended to remain unaltered or decrease. Despite a general lack of effect, competing for self and for class generally improved the performance of the girls.

340. WRIGHT, Edward John Albert. Effects of Light and Heavy Equipment on the Acquisition of Sports-Type Skills by Young Children. Ph. D. in Physical Education. 1964. 166 p. (E. Metheny)
Summed standard scores for standing broad jump, bent knee sit-up, 50-yd. dash, ball throw for distance, and grip strength were used to equate 99 grade 2 and 3 children, aged 7 and 8, into equated groups per half-grade with 12 boys and 12 girls at each half-grade level. Except for the standing broad jump in which the girls out-performed the boys, the means for boys were better and the means increased with age. In four sport skill tests using lightweight or heavyweight equipment, 18 of 32 t ratios in favor of the boys were significant at the .05 level irrespective of equipment weight. Girls sometimes performed slightly better with lightweight equipment but the general trend favored heavyweight equipment. Differences in equipment weight had no effect on retention. Children of limited strength may learn faster with lightweight equipment. The general evidence seemed in accord with the "flow spray ending feed back" theory of proprioceptive facilitation.

341. YAGER, Barbara. Some Characteristics of Women Who Have Chosen College Physical Education Teaching. Ed. D. in Physical Education. 1964. 104 p. (E. Metheny)
Questionnaires were sent to women who had entered full-time college physical education teaching in the past 10 years in the 19 states covered

by the North Central Association of Colleges and Secondary Schools. A 90 percent return yielded 422 usable questionnaires. Over four-fifths came from middle-class homes, had undergraduate physical education majors, and would choose college teaching again if they had to rechoose. Over three-fifths previously taught in elementary or secondary school, were not informed about teaching opportunities while undergraduates, were under 30, unmarried, and "specialists," had masters' degrees, preferred teaching college-age students, desired to train teachers, but did not enter college teaching for prestige purposes. About half had parents who attended college, did not have specific preparation for teaching at the college level, received academic honors as undergraduates, were counseled or offered unsought jobs, and desired to specialize in one or two activities.

Springfield College, Springfield 9, Massachusetts (E. W. Seymour)

342. ACHIUGO, Ezeakolam. A Survey of the Methods Used in Promoting Students' Participation in Soccer in the High Schools, Colleges, and Universities of the United States. M.S. in Physical Education. 1964. 100 p. (D. Bridgeman)
Soccer coaches of 75 high schools and 63 colleges and universities were surveyed by questionnaire concerning the status of soccer teaching and competition within their institutions and the methods used for stimulating participation by students. Relatively, opportunities for soccer experience were greater in colleges and universities than in high schools. Many professional preparation institutions have very limited or no soccer programs. Common promotional methods included letter awards, teacher encouragement, intramural and interscholastic or intercollegiate competition, movies, bulletins, and good facilities and equipment.

343. ADRIAN, Marlene J. Selected Motor and Psychological Changes in College Women. D.P.E. 1964. 143 p. (Microcard) (C. Shay)
Forty-one women who had completed three years at Springfield College provided data from the start of their freshman year and the end of their junior year of college. These were taken from the Edwards Personal Preference Schedule, Allport-Vernon-Lindzey Study of Values Test, Rogers Physical Fitness Index, 50-yd. dash (subdivided into 15-yd. acceleration plus 35-yd. pure speed components), 160-yd. shuttle run, and the vertical jump. As measured by the Edwards Schedule and the Study of Values, significant changes were noted. The subjects became more interested in the theoretical and aesthetic values. Heterosexuality and change needs increased while deference and abasement decreased. They became more autonomous, less religious, and less willing to help others. The two dominant values (religious and social) were the same at both testing periods. Dominant needs changed more than dominant values. Physical fitness and strength increased significantly beyond the .01 level, but individual motor performance achievements generally were maintained. There was no indication that the changes which occurred in needs, values, motor performance, and strength were related.

344. BARNETT, John S. A Selective, Annotated and Indexed Bibliography of Soccer Publications. M.S. in Physical Education. 1964. 118 p. (F. Geisler)
Four hundred and fifty-three books, periodical articles, unpublished materials, visual aids, and yearbooks were indexed under 22 headings and 51 subheadings. Each entry was annotated and the bibliography served as a handy reference for the soccer coach interested in examining the literature concerning the game or specific aspects of the game of soccer.

345. BOSWORTH, Janice M. Relationships Between the Vertical Jump Performance of College Women and Selected Anthropometric Measurements and Strength Variables. D. P. E. 1964. 130 p. (Microcard) (C. Shay)
Springfield College women freshmen (N = 107) were tested for leg strength and vertical jumping ability. Anthropometric measures and ratios were obtained from photographs. Correlations were computed between the vertical jump and each of the anthropometric variables and leg strength. A multiple R of .612 was obtained with the criterion using leg lift/weight X shape index, bi-iliac width/leg length 2, lower trunk length 2, lower leg length 1/upper leg length 2, and foot width. Neither anthropometric measurements or strength variables, nor the cumulative effect of the selected variables, were sufficiently related to the vertical jump to predict performance adequately.

346. FAIRFIELD, Philip D. A Study of Students Who Changed Programs of Studies at Springfield College. M. S. in Physical Education. 1964. 60 p. (C. Shay)
Members of the 1964, 1965, and 1966 classes at Springfield College served as subjects. The SAT Math and Verbal scores, Edwards Personal Preference Schedule Results, and Rogers' Physical Fitness Index scores served as variables for comparing the students who changed their major course of study with those who did not. Among the men, no significant difference was found between those who changed and those who did not. Among the women who changed their majors, the Edwards variable of change was significantly higher (.01) and PFI scores were significantly lower (.05) than for those who remained in the original major.

347. FROMER, Kay. A Study to Compare Arm and Shoulder Girdle Strength of Girls as Measured by the Cable Tensiometer with Four Other Measures of Arm and Shoulder Girdle Strength. M. S. in Physical Education. 1964. 49 p. (E. Seymour)
The investigation determined relationships between a cable tensiometer test of arm and shoulder girdle strength and the modified pull-up, the chin-up, the endurance hang, and McCloy's Pull-Up Strength Formula for girls. Subjects were 278 high school girls. The most significant relationship was between modified pull-ups and McCloy's Pull-Up Strength. The chin-up test and endurance hang correlated highly. McCloy's Pull-Up Strength was the only measure to relate significantly to the tensiometer results. No battery from the four measures gave an R of sufficient size to warrant developing a regression equation. In view of the relatively low intercorrelations among test items, they seemed not to be measuring the same thing.

348. GAUDET, Eugene E. A Comparative Study of Two Methods of Throwing a Baseball from the Outfield to Home Plate. M. S. in Physical Education. 1964. 37 p. (W. Doss)
Ten varsity, junior varsity, and freshmen outfielders threw the ball from distances of 150, 175, and 200 ft. from home plate using throws which traveled the entire distance on the fly and throws which bounced before reaching home plate. Nine subjects had 18 throws with each method at each distance and one subject had 15 throws with each method at each distance. The Hale Reaction-Performance Timer was used to measure to the nearest .01 second the time lapse between release of the ball by the outfielder and contact of the ball with the catcher's mitt. The throw on the fly proved significantly faster than the one on the bounce from each of the three distances.

349. JONES, Richard N. The Development of a Volleyball Skills Test for Adult Males. M. S. in Physical Education. 1964. 48 p.

(J. Genasci)
A test battery was constructed for serving, setting up, and spiking in accordance with United States Volleyball Association rules. Scores on the different items were converted to standard scores which were added for each of the subjects. Four teams were formed with the top six subjects on Team I, etc. A round robin tournament was played among the four teams. During play, three volleyball experts made judgment ratings of each individual's ability and the three ratings were combined for a composite rating from which the subjects were then ranked on playing ability. A rho of .42 was obtained between rankings by the panel of experts and test battery rankings. Ranking of team correlated .81 with final standings in the round robin tournament. The highest relationship between rankings of any two judges was .48 and the lowest was .38.

350. MANCINI, Victor H. A Study of the Relationship of Hand Dominance to Performance Time. M.S. in Physical Education. 1964. 83 p. (C. Shay)
Male Springfield College undergraduates (20 right-handed and 10 left-handed) starting from a two-point stance were told which direction to move laterally. The lead step method was used and the subject's lead foot depressed a switch mat connected to a Hale Reaction-Performance Timer. As the subject's foot was removed from the mat, the clock was started. A second switch mat 10 yd. away stopped the timer as the subject's foot depressed the mat. All subjects were trained in the technique and were instructed to run as quickly as possible. Each subject was timed 10 times running to the right and 10 times running to the left but the final five trials in each category were employed for analysis. Right-handed subjects ran significantly faster (t of 15.00) going to the right and left-handed subjects were significantly faster (t of 11.33) going to the left. The actual mean difference for right-handed subjects was .015 sec. and for left-handed subjects, .034 sec.

351. MILLMAN, Robert N. Integration of the Physically Handicapped in Elementary School Physical Education Programs. M.S. in Physical Education. 1964. 56 p. (J. Parks)
A questionnaire was sent to the directors or teachers of elementary school physical education in 47 consolidated school districts of Westchester County. Personal visits were made to seven districts. Letters were sent to the 48 continental state departments of education. State department replies showed only nine states with an official policy recommending integration with proper implementation. Adapted physical education in integrated classes did not exist in the large majority of states. In the Westchester County school districts, some send physically handicapped elementary school children to special schools or special classes. Thirteen districts exempt at least some of their physically handicapped from physical education. Nine districts use such children as scorers, timers, and judges. Only three districts reported adapted physical education programs and only two had swimming pools.

352. NELSON, Arthur H. A Comparative Study of Personality Traits in Selected High School Students. M.S. in Physical Education. 1964. 61 p. (E. Seymour)
The Edwards Personal Preference Schedule was administered to 112 high school juniors and seniors categorized as football (varsity letter winner), drama (acceptable to National Thespian Society), music (completed two auditions for music group), dual-participant (qualified for music or drama and a letter winner in baseball, basketball, football, soccer, or wrestling), and nonparticipants (no extracurricular activity). Analysis of variance showed little difference among groups in personality. Where differences did occur, the drama and nonparticipant groups tended to

show similar differences in comparison with the football, music, and dual participant groups. The dual participants scored significantly higher on deference than the drama and nonparticipant groups. The nonparticipants scored significantly lower than any other group on affiliation. However, the subjects reflected similar "manifest needs in general."

353. OMO-OSAGIE, Anthony I. A Study of Selected Undergraduate Courses in the Physical Education Major's Program. M.S. in Physical Education. 1964. 71 p. (J. Parks)
One hundred colleges and universities with NCATE accreditation for preparation of physical education personnel were surveyed by letter concerning the professional courses in organization and administration of physical education; history, principles, and philosophy of physical education; and methods and materials of physical education. Course outlines were obtained and analyzed in terms of the topical headings recommended at the Professional Preparation Conference. Analysis showed similarity in curricular offerings and in topical headings for organization and administration and for methods and materials. The limited number of topical headings recommended for the three courses by the conference appeared insufficient for actual course content.

354. PASCARELLA, Frank J. A Study to Determine the Relationship Between Selected Physical Tests and Success in Skill Courses. M.S. in Physical Education. 1964. 49 p. (C. Shay)
Data were obtained on 185 male college freshmen enrolled in the professional physical education program to determine the relationship between physical test scores (PFI, Sargent jump, 35-yd. pure speed run, 160-yd. shuttle run, and hand reaction time) and letter grades in one or more skill courses (baseball, basketball, badminton, gymnastics, handball, soccer, track, volleyball, and wrestling). Tri-serial r was used. Grades in swimming correlated .48 with the PFI while handball had a correlation of -.56. The 160-yd. shuttle run did not relate significantly to any of the skill courses. For the pure speed run, the relationships with soccer (.29), handball (.23), and baseball (-.28) were significant at the .05 level. The Sargent jump related significantly at the .01 level to wrestling (.52) and basketball (.46) and at the .05 level to track (.35) and volleyball (.34). Hand reaction time was not significantly related to any of the skill course grades.

355. PHILLIPS, Everett J., Jr. A Study to Determine the Effect of Two Weight Resistive Exercises on Acceleration Interval of the Sprint Start. M.S. in Physical Education. 1964. 41 p. (E. Seymour)
Ten sprinters and hurdlers at the University of Rochester were timed electrically in five starts for 15 yd. after two weeks of conditioning. Individuals were assigned to two equated groups on the basis of their best times and did 10 repetitions daily at the end of 6 weeks of practice. One group did deep knee bends with the forward foot in starting on a platform 10 in. above the ground. The other group lay prone with the knee flexed 90° and raised a load in back of the knee while keeping the hips in contact with the ground. Retests showed that acceleration increased insignificantly in both groups with the knee bend group having a greater increase. The exercises were continued throughout the track season and new records were set in the 100 and 400 yd. dashes and the high hurdles; the 220-yd. dash record was tied.

356. ROBINSON, Sarah M. A Study of the Adult Appraisal of Cerebral-Palsied Children. M.S. in Adapted Physical Education. 1964. 80 p. (M. Thorsen)
Nineteen children enrolled in the Chicopee, Massachusetts, School for

the Handicapped and the Junior Workshop of Springfield, Massachusetts, were observed by a case worker of the United Cerebral Palsy Association of Western Massachusetts at school and, where possible, at home. Separate interviews, based on the Vineland Social Maturity Scale, were held with teachers and parents of the children. Results of the observations and interviews were reported as individual case studies. The Vineland Scale showed a high degree of agreement between the school and home ratings.

357. SAMUELSON, Carl R. The Making of an Olympic Champion. M.S. in Physical Education. 1964. 216 p. (C. Silvia)
The author traced the development of William A. Yorzyk into an Olympic Swimming Champion (1956) in the dolphin butterfly stroke. Action photographs of Yorzyk were studied and mechanical and kinesiological principles were related to his technique. The range of motion of joints of his ankles and feet was measured from X-rays. Somatotype photographs and neurological pictures were examined. The study investigated the hand-foot concept of swimming under which Yorzyk developed his swimming skill. His training program and performances were analyzed from Springfield College varsity swimming team records, Yorzyk's personal diary, and direct association during his training and development.

358. SAYED, Alae-Eldin. A Mechanical Analysis of a Floor Exercise Routine. M.S. in Physical Education. 1964. 105 p. (C. Shay)
The 1960 Olympic Floor Exercise Routine, as prescribed by the International Federation of Gymnastics and as demonstrated by a member of the Japanese gymnastic team of that year, was carefully analyzed from a film of the demonstration. Each of the parts of the routine was examined and the mechanical laws and principles related to each were identified. Twenty-seven laws or principles of mechanics were observed, with action-reaction appearing on 16 occasions, increase of momentum 10 times, and disturbing equilibrium seven times. Other principles were noted from one to six times.

359. SCOLNICK, Tony. A Comparison of the Effects of Selected Exercises, Isometrics, and Isotonics on Explosive Power and Leg Strength. M.S. in Physical Education. 1964. 53 p. (C. Shay)
Dynamometric leg strength and Sargent jump tests were given to 22 Springfield College freshman basketball candidates who were randomly divided into three groups that practiced separate exercise programs three times a week for four weeks before being retested. Group A with eight subjects practiced squat jumps, backboard touches, run in place, and jumping rope; they increased 40 pounds in leg strength and .9 inches in jumping, on the average. Group B (7 S) practiced isometric heel raises and three-quarter knee bends and increased 43 pounds and 1.2 inches. Group C (7 S), with isotonic heel raises and three-quarter squats, increased 151 pounds and 1.6 inches. Analysis of covariance indicated that the mean gains were not significant at the .05 level.

360. SINCLAIR, David H. The Effects on Performance in the AAU Physical Fitness Test of Awarding a Certificate. M.S. in Physical Education. 1964. 55 p. (J. Genasci)
The AAU Physical Fitness Test was administered to 133 boys in grades 7 and 8 at Kings Park Junior-Senior High School, Long Island, New York. Students were told to do as well as they could on each of the six items. A week later, the test was readministered with an announcement that if they passed all six items, they would receive an AAU certificate. Mean differences were analyzed by t ratios for each item. Pull-ups, sit-ups, push-ups, standing broad jump, and one-mile run-walk performances were significantly better beyond the 01 level. On the 60-yd.

sprint, the t of .80 fell below the .05 level. Performance was heightened through the prospect of a certificate and the validity improved because performance more closely approximated capacity.

361. TAYLOR, Bryce M. Effect of Restriction of the Knee and Ankle Joint Movement in One Leg upon the Action of Similar Joints of the Opposite Leg. D.P.E. 1964. 138 p. (Microcard) (P. Karpovich)
Eleven volunteers from Springfield College whose movements in ankle and knee joints were restricted by a mechanical device and seven patients from Springfield Hospital, Springfield, Massachusetts, and the Newington Veterans Administration Hospital, Newington, Connecticut, who were below- and above-the-knee amputees served as subjects. Measurements included ankle and knee joint angles during level walking, walking up and down a 10° ramp and ascending and descending stairs, duration of swing and support phase plus their ratio, angular velocity of the knee during swing phase, step length, cadence, and five anthropometrical measurements. Electrogoniometric measurements on the nonrestricted leg showed that experimental restriction of the knee and ankle joint of one leg did not affect the action of the opposite leg during level walking but did affect it when subjects walked upgrade and downgrade. Goniograms of experimental subjects resembled those of patients with similar restrictions and patients who had mastered basic walking techniques had gaits similar to normal subjects.

362. TETREAULT, Edwin H. A Mechanical Analysis of Two Badminton Serves. M.S. in Physical Education. 1964. 67 p. (E. Seymour)
Films (16mm) were taken of three expert badminton players performing the high-deep serve normally used in singles and the short-low serve used predominantly in doubles. Each subject was filmed from two camera positions. For each stroke the film was reviewed to determine: length of supporting base at start of stroke, use of backswing, continuity of motion from backswing to forward swing, portion of stroke during release of shuttle, angle through which stroking arm rotated during forward swing, degree of elbow flexion during forward swing, degree of wrist extension one frame prior to contact with shuttle, degree of knee flexion and extension throughout forward swing, degree of increase in body lean during stroking, amount of forward movement of shoulder throughout forward swing, point at which contact was made with shuttle, shuttle velocity after contact with racket, and angle of trajectory of shuttle after contact.

363. VANDERSTOEP, Sandra F. A Survey of College and University Intramural Programs for Women. M.S. in Physical Education. 1964. 92 p. (A. Jewett)
Four-year colleges and universities in Massachusetts with intramural programs for women were surveyed. A structured interview form was developed from the literature and the interviews were recorded on tape. Information obtained related to purposes of the programs, facilities, supervision, financing, physical examinations, eligibility, activities, officials, awards, and publicity. Institutions were classed as resident or nonresident, private or public, professional preparatory in physical education or no professional program, coeducational or girls school, and size (1 to 999, or 1,000 and up). Programs were compared in terms of these classifications.

364. WALL, Joseph C. A Study of Motivation in Improving Low Physical Fitness Index Scores. M.S. in Physical Education. 1964. 59 p. (C. Shay)
Fifteen Springfield College male freshmen with PFI's below 85 were interviewed with a motivation inventory developed by the investigator

through a pilot study using 15 other students drawn at random from the student body. Using the interview plus observation, nine students were classed as motivated and six as nonmotivated. A 5-week developmental exercise program was given to all subjects and they were retested on the PFI. Analysis of covariance gave an F ratio for adjusted final means which failed to approximate significance. The motivated group did not improve its mean PFI significantly more than the nonmotivated group.

365. WATERFIELD, Donald A. The Effect of Hand-Foot Placement on Reaction and Performance Times in the Backstroke Start. M.S. in Physical Education. 1964. 35 p. (C. Silvia)

Nineteen competitive swimmers were tested on backstroke starts over a distance of 5 yds. using a Hale Reaction-Performance Timer to record reaction time (interval between a starting bell and feet leaving the pool wall) and movement time (interval between feet leaving the pool wall and head passing a line 5 yds. down the pool). The two were added to give performance time. Each subject had nine trials with the bar at 12, 18, and 24 inches. The reaction time for the 18-in. starting bar was significantly (.01) faster than for the other heights. Reaction time for the 24-in. bar was significantly (.05) faster than for the 12-in. bar. Although no significant differences were noted in performance time, results from the 18-in. bar were faster than those from the other two heights and approached significance at the .05 level.

366. WILSHIN, David B. An Experimental Study to Determine the Force Necessary to Hold the Crucifix on the Still Rings. M.S. in Physical Education. 1964. 45 p. (E. Steitz)

Fifteen male gymnasts capable of performing a crucifix were tested. Tension on the ring cables as measured with tensiometers was converted to pounds and represented the total force. Horizontal and vertical components were calculated with trigonometric functions. The total force averaged 14.73 lbs. greater than body weight. The vertical force was approximately equal to body weight and the horizontal force was slightly less than one-half the body weight. The direct (not resultant) sum of the vertical and horizontal components was approximately 1.33 times the total force and 1.5 times the body weight. The crucifix required a large amount of strength.

367. YARNALL, Charles C. The Relationship of Physical Fitness to Selected Measures of Popularity. M.S. in Physical Education. 1964. 42 p. (C. Shay)

The Indiana Motor Fitness Test, Index I for high school and college men, was administered to 75 male high school seniors along with a sociometric measure of popularity and a questionnaire concerning out-of-class activities. Motor fitness correlated .41 with popularity. Subjects with high fitness scores were significantly more popular and subjects with high popularity were significantly more fit at the .01 level. The most popular boys tended to belong to more clubs and organizations, hold more offices, be athletes, participate more in intramurals, and read fewer magazines than the least popular students.

Temple University, Philadelphia 22, Pennsylvania (A. Olson)

368. BURRIS, Barbara J. A Study of the Speed-Stroke Test of Crawl Stroking Ability and Its Relationship to Other Selected Tests of Crawl Stroking Ability. M. Ed. in Physical Education. 1964. 83 p. (A. Olson)

Men and women (N = 69) in swimming classes at Temple University during the spring semester of 1962 were randomly selected for a study to determine the validity, reliability, and objectivity of the speed-stroke test, in which the subjects swam 25 yds. of the crawl stroke in as few seconds and with as few strokes as possible. Results were correlated with five previously validated tests of crawl stroking ability selected to serve as criteria, and with measures of buoyancy, arm length, and arm strength. The speed-stroke test was valid (.836), reliable (.906), and objective (.993). T-score norms were constructed for the speed-stroke test for 20- and 25-yd. distances for men and for women.

369. CASCINO, Joseph A. The Effects of a Program of Progressive Rope Skipping on the Cardiovascular Fitness of Adult Men. M.Ed. in Physical Education. 1964. 117 p. (A. Olson)
Nine adult males between the ages of 19 and 43 skipped rope for 10 minutes a day, 5 days a week, for 8 weeks. The cardiovascular fitness of the subjects was improved considerably. There was a 25 percent improvement in the Schneider Index; a 23 percent improvement in the Physical Efficiency Index, computed from the results of the Harvard Step Test; and a 13 percent improvement in maximal oxygen consumption, predicted from the Astrand nomogram. There was also a slight increase in grip strength. The highest precordial T wave, vital capacity, and arm strength were not improved by the exercise program. Rope skipping can be a comparatively convenient and inexpensive method of promoting cardiovascular fitness in adult men.

370. COMA, Anthony S. The Characteristics of Male Disciplinary Offenders and the Male Disciplinary Problem at a Large Urban High School. Ed.D. in Physical Education. 1964. 118 p. (A. Olson)
The 145 boys who were disciplined by school authorities five or more times during one year prior to the investigation were analyzed for status in a number of school-related factors, social and personal environment delinquency proneness (paper and pencil tests), body type, and physical fitness. The disciplinary problem boys were more frequently found in the early grades in high school, scored lower on general intelligence tests, performed more poorly scholastically, had personal problems outside of school as well as in school, were more unsure of their occupational and scholastic future, had lower status occupational objectives, and enjoyed school and things about school less than other boys.

371. CONARD, Ruth. A Cinematographical Analysis of the Major Sequential Movement Patterns of Skilled, Semi-Skilled, and Non-Skilled Baseball Batters. Ed.D. in Physical Education. 1965. 290 p. (A. Olson)
Motion pictures were taken of five each skilled, semi-skilled, and non-skilled male batters. The films were analyzed to determine the sequential positions, actions, and angular velocities of bodily parts and the velocities of pitched and hit balls. Analysis of variance was used to determine the following significant differences. The skilled group had a more nearly vertical left thigh on contacting the ball. The skilled and semi-skilled had a more consistent starting position of the pelvis, greater angular velocity of the wrists, forward movement after contacting the ball, greater bat movement before and less after contacting the ball, and a more effective point of impact. The non-skilled showed more initial backward rotation of the pelvis and a backward movement just after contact with the ball.

372. EDELSTEIN, Elliott S. Changes in Strength, Girth, and Adipose Tissue of the Upper Arm Resulting from Daily and Alternate Day Progressive Weight Training. Ed.M. in Physical Education. (A. Olson)
Two groups of high school students, matched on strength and body build,

exercised the muscles of the upper right arm with weights daily or on alternate days for 6 weeks. The strength and girth of the exercised arm increased in both groups and the adipose tissue decreased but the final mean differences were not significant.

373. FASSBENDER, William V. Daily Versus Alternate Day Isometric Exercise for the Development of Arm and Shoulder Strength in Seventh and Eighth Grade Boys. Ed. M. in Physical Education. 1964. 68 p. (A. Olson)
Two groups of grades 7 and 8 boys with poor arm and shoulder strength trained with six isometric exercises either daily or on alternate days for 10 weeks. Both groups showed significant increases in elbow flexion and extension strength of about 30 percent. The biceps girth increased and the adipose tissue over the triceps decreased nonsignificantly in both groups. The differences between groups were not significant so daily exercise appeared no better than exercise on alternate days.

374. MYERS, Thomas D. Caloric Energy Cost of Selected Exercises. Ed. M. in Physical Education. 1965. 153 p. (A. Olson)
The energy cost of 12 exercises recommended by the President's Council on Youth Fitness (1961) was determined with eight male high school subjects performing for one minute at a specified rate. Air samples were collected continuously and analyzed with a gas chromatograph. The net caloric cost per minute ranged from 4.92 calories for the sit-up to 52.00 calories for the squat jump. The cost per repetition ranged from .23 calories for the 140 step/minute run in place to 2.22 calories for the squat thrust. The energy cost was greater for larger boys on a net and per square meter of surface area basis.

375. WENGER, Janet L. Selected Brachial Pulse Wave and Blood Pressure Measurements of College Women Before and After Exercise. Ed. M. in Physical Education. 1965. 114 p. (A. Olson)
Area under the brachial pulse wave, systolic amplitude, pulse rate, diastolic blood pressure, and systolic blood pressure were measured on 49 college women sitting, standing, 15 sec. after, and 2 min. after 6 min. of exercise at 600 kpm on a bicycle ergometer. The postexercise pulse rates showed the highest correlation but only two of the correlations obtained under the different conditions were significant. Comparison of mean changes showed that the systolic amplitude recovered faster than the other measurements.

376. WENNER, George J. The Effects of a Moderate Physical Conditioning Program on Cigarette Smokers and Nonsmokers as Measured by Heart Rate Response to a Standard Bicycle Ergometer Test. Ed. M. in Physical Education. 1964. (A. Olson)
College men who smoked 10 or more cigarettes a day were compared with nonsmokers before and after a 6-week conditioning program of moderate intensity in the "fundamental" physical education course (HPER 1.0). The smoking group had a higher mean heart rate on the initial test. Both groups improved in endurance as a result of the program but the difference in improvement was not significant.

Texas Woman's University, Denton, Texas (A. S. Duggan)

377. BUTLER, Elynor Elizabeth. The Development of a Guide for the Production of Modern Dance Programs by University Students for Educational Television Based Upon a Series of Such Programs Presented over Station WGTV, at the University of Georgia, Athens, Georgia, during the Academic Year of 1963-64. M. A. in

Dance and Related Arts. 1964. (C. Sherrill)
The pilot study involved preparing three 30-min. programs covering an orientation lecture-demonstration, explanation of a composition, and selected compositions, collectively entitled "Ingredients for Dance." The guide covered a brief history of TV, the facilities and personnel usually connected with educational TV, and general principles concerning thematic material, choreography, accompaniment, commentation, costuming, make-up, and direction, along with suggestions for scenery, photography, and lighting.

378. DAVIS, Hazel. A Study of the Present Practices in Adapted Physical Education in Selected Public School Systems in Texas and Oklahoma. M. A. in Physical Education. 1964. (C. Sherrill)
The survey was limited to selected schools with enrollments over 3,000 and to 1963-64 programs. Adapted programs in the elementary and secondary schools were weak or nonexistent. Practices in administering medical examinations and health services rarely adhered to policies established by the AMA-NEA Joint Committee on Health Problems in Education.

379. FURREY, Dolores M. A Pilot Study Pertaining to the Correlation of Selected Physical Education Activities Indigenous to Specific Countries with Classroom Instruction in Social Studies in the Sixth Grade of the Demonstration School of the Texas Woman's University. M. A. in Dance and Related Arts. 1964. (R. Amos)
Units of instruction were prepared concerning games and folk dances indigenous to Europe, Asia, Africa, and Australia. Thirteen one-hour programs adjusted to the needs, interests, skill, and growth characteristics of grade 6 children were developed. These were integrated once a week with the social studies curriculum and provided a desirable supplement to studying the historical, geographical, and sociological aspects of the countries.

380. LEISTER, Christine H. A Comparative Study of the Health Problems of Selected Senior High School Students Participating in the Distributive Education Program and of Selected Students Enrolled in the General Population of the Dallas Independent School District for the Guidance and Instruction of These Students with Implications for the Occupational Health Area in the Health Education Program. M. A. in Health Education. 1964. (R. Amos)
Cumulative health records, clinic referral forms, and employer's report on trainee forms for 218 senior high school students in the distributive education program were compared with those of 218 senior high school students in the general school population. The two groups had similar health problems. The most frequent communicable diseases were measles, mumps, chicken pox, colds, and whooping cough. Hay fever, asthma, bronchitis, croup, fractures (primarily arm and wrist), and headaches were equally frequent. The distributive education students included a greater number who tired easily, visited the school clinic more frequently, had more uncorrected physical defects (primarily dental), and came from significantly larger families with fathers in fair health.

381. SPRAGENS, Jane Ellis. A Study of the Physical Education Needs and Interests of a Selected Group of Orthopedically Handicapped Children with Recommendations for Planning and Conducting Physical Education Activities. M. A. in Health, Physical Education, and Recreation. 1964. (C. Sherrill)
Case studies (c. 20) were made of orthopedically handicapped children in Casis Elementary School, Austin. The orthopedically handicapped

had common needs with other children but greater difficulty in mastering one or more skills, additional frustrations, and some deficit in social experience with their peer groups. Their physical education interests were necessarily limited to some extent but the limitations were often magnified by lack of proper instruction, insufficient opportunity to play with their fellows, or lack of a recreation program in which they were welcome and had some appropriate function. A group program was advocated along with workshops for teachers, parents, and recreation leaders.

382. SPRING, Marjorie J. A Pilot Study in the Teaching of Selected Activities in Apparatus and Tumbling to Children Enrolled in the First Grade with Emphasis upon the Problem Solving Approach. M.A. in Physical Education. 1964. (C. Sherrill)

A program utilizing equipment that was available or could be improvised was developed for the 25 children in grade 1 at the Demonstration School. The children were encouraged to explore the tasks inherent in apparatus and tumbling activities with guidance but without demonstration and verbal analysis of skills. The program proved effective.

383. THORPE, Jo Anne Lee. A Study of Intelligence and Skill in Relation to the Success Achieved by College Women Engaged in Badminton and Tennis Singles Competition. Ph. D. in Physical Education. 1964. (C. Sherrill)

The Otis Quick-Scoring Mental Ability Test and two badminton or tennis skill tests were administered to 375 women enrolled in badminton or tennis classes at North Texas State University, Texas Christian University, and Texas Woman's University during 1963-64. Subjects were organized into leagues within classes on the basis of the skill tests; there was a singles round robin tournament in each league with the percentage of points won used as the measure of success. Success in the tournament correlated .65 with skill in badminton and .60 with skill in tennis as measured by the skill tests but the correlations of skill and success with intelligence were practically zero. The success of the group with higher skill was significantly greater in each sport than that for the lower skill group with intelligence held constant, but the success of the more intelligent group was not significantly greater in either sport with skill held constant.

University of Toledo, Toledo, Ohio (P. B. Johnson and W. F. Updyke)

384. ALLEN, Thomas R. A Study of the Effects of Warm-Up on Endurance. M. Ed. in Physical Education. 1962. 30 p. (P. B. Johnson)

385. BELKA, David E. A Comparison of the Effects of Dynamic, Static, and Combination Training on the Strength of Dominant Wrist Flexor Muscles. M. Ed. in Physical Education. 1964. 58 p. (W. F. Updyke)

Twenty subjects were divided into four equated groups randomly designated as "static," "dynamic," "combination static-dynamic," and "control." Pre- and post-training tests of maximum dynamic strength, static strength (3 angles), static endurance, and wrist range of motion were administered. Subjects trained 5 days per week for 5 weeks. Analysis indicated no significant differences among the three experimental groups but the dynamic and combination groups improved significantly over the control group in maximum dynamic strength. The static and dynamic groups both improved significantly over the control group in two measures of static strength.

386. BIERLEY, Russell R. The Effect of a Program of Overload Jumping and Weight Training on Vertical Jump Scores. M. Ed. in Physical Education. 1961. 33 p. (P. B. Johnson)

387. CONIAM, C. Jack. A Study of Recovery Methods: The Effects of Three Breathing Methods Combined with Activity and Inactivity. M. Ed. in Physical Education. 1962. 32 p. (P. B. Johnson)

388. CONNER, James R. The Effects of Acute Starvation and Recovery on Organ Weights and Tissue Hydration in Young Male Rats. M. Ed. in Physical Education. 1963. 59 p. (P. B. Johnson)

Forty-one male albino rats (275-300 gr. initial weight) were utilized. One starvation-induced 10 percent weight reduction followed by realimentation produced a significant reduction in weight of liver and kidneys but both were back to normal following 24 hours realimentation; the weight regained by liver was primarily water. Following two starvation-realimentation periods, the weights of the liver, heart and kidneys were significantly reduced; the kidneys and liver returned to normal following realimentation (gain in liver again primarily water); heart weight did not return to normal and showed a significantly reduced dry weight even following return to prestarvation body weight. The immediate effects of an acute starvation-induced 10 percent weight loss were not entirely reversed by realimentation to previous body weight.

389. GUENTHER, Walter T. The Effects of a Basic Gymnastics Program on Selected Isometric and Isotonic Strength Tests. M. Ed. in Physical Education. 1963. 44 p. (W. F. Updyke)

Programs of basic exercises on the side horse, parallel bars, horizontal bar, and trampoline were studied with respect to their effect on strength. Thirteen isometric and isotonic strength tests were administered to experimental and control groups before training began and after 4 and 8 weeks of training. Subjects were interviewed weekly concerning outside activities. As a means of minimizing the "Hawthorne effect," control group subjects were given a placebo identified as a special "strength pill" each week. Although strength gains occurred in all tests, only five were statistically significant. The combined average strength showed improvement at the .01 level of probability. Control group improvement was not statistically significant.

390. HALL, Bobbie. An Experimental Study of the Effects of Modern Dance on Selected Tests of Fitness. M. Ed. in Physical Education. 1961. 54 p. (P. B. Johnson)

391. HALL, Michael D. The Effects of Epinephrine on Immediate and Postponed Exercise in Rats. M. Ed. in Physical Education. 1962. 28 p. (P. B. Johnson)

392. HOHENBERGER, D. Marvin. A Study of Motor Skill in Rats: 1. Effects of Spacing Practice; 2. Effects of Fatigue. M. Ed. in Physical Education. 1962. 40 p. (P. B. Johnson)

393. HOOGENDOORN, Russell H. The Effects of Cooling and Various Intensities of Preliminary Exercise on Reaction Time. M. Ed. in Physical Education. 1963. 36 p. (W. Updyke)

Male volunteers (N = 30) who served as their own controls were subjected to body cooling followed by exercises ranging from moderate to strenuous. Reaction time of selected large and small muscle groups was measured after each condition. No significant differences in reaction time were found to result from any of the conditions employed, even exercise of an exhaustive nature.

394. IRWIN, Robert S. The Effect of Eccentric Muscle Training on the Strength of the Forearm Flexors. M. Ed. in Physical Education. 1964. 38 p. (W. F. Updyke)

Sixteen male volunteers were divided into two groups. Tests of static and dynamic strength were administered before and after a training interval of 5 weeks. Static measures were determined by cable tension methods and dynamic strength was measured as 1 RM on the training device which provided for a constant resistance throughout the range of motion. The overload was 120 percent of dynamic maximum and was progressively increased in 2.5-lb. increments. Rate of joint extension was regulated by a metronome and held constant throughout the training period. Statistically significant increases of 15 lbs. in dynamic strength and 10 lbs. in static strength resulted.

395. LAFFERTY, Robert C., III. An Investigation of the Effects of Sleep Deprivation on Specific Tests of Physical and Mental Efficiency. M. Ed. in Physical Education. 1962. 45 p. (P. B. Johnson)

396. McCARTNEY, Thomas P. A Comparison of Concentric-Eccentric Overload and Concentric Underload Methods and Their Effect on Strength Improvement as Measured by a Pull-Up Test. M. Ed. in Physical Education. 1963. 32 p. (W. F. Updyke)

College male subjects (6) unable to chin were divided arbitrarily into two groups that trained 3 days a week for 6 weeks. The overload group started with 5 lbs. added weight which could be increased and made a maximal effort to pull up from a fully extended position, from a 90° elbow flexion position, and again after lowering themselves fully from a position with the chin over the bar. The underload group used a parachute harness and counterbalancing system which permitted them to chin —on the assumption that faulty mechanics and/or inadequate task perception were the major inhibitors. All subjects improved in chin-to-bar distance and the overload group showed a significant improvement in 1 RM biceps curl, but the difference between groups in pull-ups was not significant.

397. WALKER, Ross Bailey. The Effects of Interspersed Progressive Muscular Relaxation on Subsequent Exercise Responses. M. Ed. in Physical Education. 1963. 53 p. (P. B. Johnson)

Ten nonathletes underwent two standardized, progressive, 6-min. bouts of exercise on a bicycle ergometer with 9-min. recovery between. Four athletes underwent three similar bouts with 9-min. recovery between bouts. The control half of each group received verbal instructions to keep them awake; the experimental half received verbal instructions in relaxation. Instruction in progressive relaxation was beneficial for the nonathletes but did not aid the athletes in terms of heart and ventilation rates during recovery.

Washington State University, Pullman, Washington (R. C. Wiley)

398. AMES, Evelyn E. A Comparison of Two Methods of Teaching Badminton Skills. M. S. in Physical Education. 1963. 40 p. (V. P. Dauer)

399. BENSON, Jack C. An Analysis of the Olympic Event Routines of Various Gymnastic Champions. M.S. in Physical Education. 1963. 69 p. (V. P. Dauer)

400. BONA, Richard Charles. A Comparison of the Instep Kick to the

Toe Kick in Football. M.S. in Physical Education. 1963. 65 p. (V. P. Dauer)

401. CARLSON, Melvin G. Weight Reduction in Wrestling. M.S. in Physical Education. 1964. 39 p. (V. P. Dauer)

402. CHASE, Gary A. Interrelationships Among Blood Lactate, Blood Glucose, Respiratory Quotient, and Quality of Performance During Training. M.S. in Physical Education. 1964. 69 p. (P. D. Gollnick)

403. DECKO, James A. Managing Recreation Authorities in the State of Washington. M.A. in Recreation. 1964. 114 p. (V. P. Dauer)

404. ENOS, V. Rodney. An Analysis of the Training, Experience, and Responsibilities of Athletic Directors in Junior Colleges of the United States. Ed.D. in Education. 1964. 124 p. (W.H. Crawford)

405. FLANNERY, Gary F. An Evaluation of Selected Weight Prediction Tests for Fourth, Fifth, and Sixth Grade Boys. M.S. in Physical Education. 1964. 55 p. (V. P. Dauer)

406. FREEMAN, Charles H. The Relationship of Arm Strength to the Energy Cost of Pull-up Work. M.S. in Physical Education. 1963. 27 p. (G. R. Hearn)

407. FREDERICKS, Aubrey L. The Comparison of Timed Push-Ups to Rogers' Arm Strength Test. M.S. in Physical Education. 1963. 49 p. (V. P. Dauer)

408. GIBB, Jesse Lon. A Comparison of Putting Ability Following Instruction with Conventional and Concentrator Putters. M.S. in Physical Education. 1964. 33 p. (P. D. Gollnick)

409. GREEN, Randy Bruce. A Survey of Existing Physical Fitness Programs in Large Colleges and Universities. M.S. in Physical Education. 1963. 43 p. (V. P. Dauer)

410. HEHN, Robert Ardell. A Study of the Intramural Program at the University of Alaska. M.S. in Physical Education. 1963. 87 p. (G. E. Galligan)

411. HENDERSON, Jerry Dale. Analysis of Theory and Practice of the Single Wing Formation in Football. M.S. in Physical Education. 1963. 90 p. (V. P. Dauer)

412. HORTON, Mildred. An Evaluation of Selected Weight Prediction Tests for Fourth, Fifth, and Sixth Grade Girls. M.S. in Physical Education. 1964. 59 p. (V. P. Dauer)

413. HUSTED, Fay B. The Selection of Physical Fitness Test Items for First and Second Grade Children. M.S. in Physical Education. 1963. 50 p. (V. P. Dauer)

414. MANSOURI, Abd El Hamid Esmat El. A Study of the Recommended Basic Skills of Soccer and the Drills to Develop These Skills. M.S. in Physical Education. 1963. 71 p. (V. P. Dauer)

415. MARTIN, Gerald R. Physical Education Curriculum and Selected Administrative Practices of Public Community Junior Colleges in Nine Western States. M.S. in Physical Education. 1964. 106 p. (R. C. Wiley)

416. McADAMS, Linda Butler. The Use of Rebound Nets as a Means of Determining Tennis Skill. M.S. in Physical Education. 1964. 50 p. (M. L. Enberg)

417. POPPE, Stanley K. A Study of Intramural Athletics in Selected Western Junior Colleges and a Proposed Program at Skagit Valley Junior College. M.S. in Physical Education. 1965. 81 p. (V. P. Dauer)

418. RUSSELL, J. Wallace. Circuit Training as a Developmental Fitness Program. M.S. in Physical Education. 1963. 42 p. (V. P. Dauer

419. THOMPSON, Kenneth D. The Decline of Intercollegiate Boxing. M.S. in Physical Education. 1963. 85 p. (V. P. Dauer)

420. TIBBITS, Thorne LeRoy. A Study of Rules Governing Competitive Interscholastic Gymnastics in the Senior High Schools of the State of Washington. M.S. in Physical Education. 1963. 56 p. (V. P. Dauer)

421. WASHBURN, Joanne. Public School Physical Education Programs for Low Fitness Students in the State of Washington. M.S. in Physical Education. 1963. 65 p. (V. P. Dauer)

422. WENDEL, Robert E. Anthropometric Measurements of All-Round Gymnasts and Gymnasts Who Specialize on the Side Horse. M.S. in Physical Education. 1964. 54 p. (V. P. Dauer)

423. WHITE, Mary Lou. Physical Education Programs for Women in Certain Junior Colleges of California, Idaho, Montana, Oregon, and Washington. M.S. in Physical Education. 1963. 73 p. (M. B. Wohlfort)

424. ZIMMERLI, William Howard. Effect of Physical Training on Erythrocyte Count and Hemoglobin Concentration in Man. M.S. in Physical Education. 1963. 56 p. (G. P. Hearn)

University of Washington, Seattle 5, Washington

(M. R. Broer and R. K. Cutler)

425. ARMSTRONG, Joan. The Effects of Participation in Selected Activities on the Heart Rate of College Women. M.S. in Physical Education. 1964. 185 p. (M. R. Broer)

Telemetered pulse rates were taken on 16 undergraduate women at the University of Wisconsin during the winter quarter. Anticipatory and activity heart rates were taken during 15 min. of badminton and contemporary dance at three levels and basketball at four levels ranging from beginning to competitive. Heart rates were also taken during a 15-min. run-walk and after 15 min. of supine rest. A sudden, rapid rise in pulse rate was followed by considerable fluctuation without any steady state in all activities. The most competitive situations evoked the greatest response. Although considerable overlapping occurred in some instances, the higher limit of pulse rates in dance was similar to the lower limit in badminton and the higher limit in badminton was similar to the lower limit in basketball.

426. AYERS, Lee Russell Halsey. An Analysis of Certain Emotional Problems of High School Football Players. M.S. in Physical Education. 1964. 159 p. (R. K. Cutler)

A questionnaire listing 21 emotional problems with subproblems and space for describing methods of handling problems and making recommendations was distributed to head football coaches in AA high schools in Washington. Conflicts between a player and an assistant coach, another teacher, or the head coach; jealousy among teammates; and problems arising from the use of automobiles during the football season were the most frequent. Many coaches considered these problems the responsibility of the coaching staff and indicated that keeping abreast of changing football tactics, teaching correct techniques, and studying the psychology of coaching would prevent the development of emotional problems.

427. BAKER, John W. The Relationship of Physical Fitness to Intelligence, Academic Achievement, and Emotional Adjustment Among Educable Mentally Retarded Boys. M.S. in Physical Education. 1964. 66 p. (E. L. Hughes)

The subjects were 74 boys from 12 to 18 years old in opportunity classes in the public schools at Edmonton, Alberta. The AAHPER Youth Fitness Test, Non-Language Multi-Mental Test, and Stanford Achievement Test were administered and emotional adjustment was obtained from teachers' ratings on a Student Evaluation Scale, Form 1-B, developed at the University of Washington. The correlation between physical fitness and intelligence was positive but not significant and the correlations of physical fitness with academic achievement and emotional adjustment were positive and significant but low.

428. BARNARD, Betty Jean. The Relationship of Rhythmic Ability and Background in Dance and Music to Swimming Achievement of College Women. M.S. in Physical Education. 1964. 142 p. (K. Fox)

University of Washington women (N = 61) in beginning, intermediate, and advanced swimming classes served as subjects. Stroke-count tests in the elementary back stroke and crawl and a timed trial in the crawl were given to the intermediate and advanced groups prior to instruction and to the three groups after instruction. Rhythmic ability was measured with Ashton's Gross Motor Rhythmic Ability Test and rhythmic background was determined by questionnaire. When subjects were divided into high and low groups on rhythmic ability and background, significant differences in favor of the high group were found for all swimming tests. Substantial relationships were found for the beginning group between rhythmic abiliity and the crawl stroke tests and between rhythmic background and all tests. Substantial relationships were found for the intermediate group between rhythmic ability and the crawl stroke time and between rhythmic background and both the crawl stroke time and total T-score for the swimming tests. Correlations for the advanced group were substantial between rhythmic ability and improvement in crawl stroke time and between rhythmic background and improvement in crawl stroke time, elementary back stroke count, and total T-score. The other correlations were low.

429. BONE, Walter E. The Increased Increment Scoring Scale as a Device for Evaluation of Performance in Track and Field Events. M.S. in Physical Education. 1964. 56 p. (R. K. Cutler)

Scales were developed according to the principle used in decathlon tables of awarding progressively more points for equal differences in performance as the performance approached the maximum.

430. BORELL, Norman C. A Survey and Evaluation of the Physical Education Curriculum, Facilities, and Administrative Organization in the Public Secondary Schools of Tacoma, Washington, 1963-64. M.S. in Physical Education. 1964. 157 p. (G. S. Reeves)

Collectively, the mean score of the 15 schools for the 10 areas of the LaPorte Score Card No. II was 16.4 as compared with the suggested average of 15. The schools were strong in activity program, locker and shower facilities, supplies and equipment, and organization and administration of class programs. Eleven schools were below average in outdoor areas, 11 lacked swimming pools, and all were substandard in modified or adapted programs.

431. BUDIC, Caroline Mary. Wolf Ritual Dances of the Northwest Coast Indians. M.S. in Physical Education. 1964. 120 p. (M. R. Broer)
The wolf ritual dances during the historic period were compared in terms of masks, paint, costume, movement, and concept. Walking and jumping steps were the most frequent forms of locomotion. Ritual dancers were limited by space, concept, and concern for displaying their masks. The imitative dancers were less restricted but their dances contained some ritual movements. The term "wolf" seemed a misnomer since most of the ritual dancers actually portrayed concepts related to the warrior spirit, the lightning serpent, and in lesser degree the thunderbird.

432. CHAROUHAS, Desmond. The Opinions of Selected Experts with Respect to the Design and Construction of Handball Courts. M.S. in Physical Education. 1964. 119 p. (R. K. Cutler)
Eighty-three players were interviewed at three national and one sectional tournaments and questionnaires were returned by 9 of 10 architects recommended by the U.S. Handball Association. A 20 x 20 x 40 foot court, with plaster walls painted allwhite or off-white and a maple floor with natural finish, was considered best. Wall cuspidors should be outside the court, and lights evenly distributed in the ceiling should be recessed. Glass back and side walls starting at least 6 ft. above the floor with gallery space behind were recommended.

433. GRANT, Douglas M. Performances by Ninth-Grade Boys in Selected Track and Field Events as Indices of All-Around Track and Field Ability. M.S. in Physical Education. 1964. 76 p. (G. S. Reeves)
Tests in seven track and field events were given to 83 ninth-grade boys. Results for all events were positively correlated and the average correlation was .523. Relative success in the 100-yd. dash was the best indicator of relative success in most of the other events since the average correlation with the other events (.643) was the highest. The shot put, which had an average correlation with the other events of .412, was the poorest index of success in the other events. Use of a larger sample permitting grouping by body type and comparison of instructed and noninstructed groups would have been desirable.

434. HARRYMAN, James W. The Contribution of Physical Education and Athletics to the Physical Fitness of Shoreline High School Boys. M.S. in Physical Education. 1964. 85 p. (E. Hughes)
The AAHPER Youth Fitness Test was administered twice to non-participant, physical education, and athletic team groups. The results indicated that the level of physical fitness was related to the level and intensity of physical activity. Students not participating regularly in physical activity decreased in physical fitness.

435. KNOP, Michael A. A Survey of Selected University of Washington Male Students to Determine Reasons for Selection of Physical Education Activity Courses in Relation to General Physical Education Objectives. M.S. in Physical Education. 1964. (G. S. Reeves)

Questionnaires covering activities taken, reasons for selection, success in registration, and a rating of general and specific physical education objectives were distributed to and collected from a random sample of freshmen men during the winter quarter of 1964. The most frequent reasons were best-liked or seasonal favorite, to learn a new activity, to improve skill, and for physical conditioning. Less than 3 percent were unable to register in their first or second choice of activities. Student opinion concerning objectives resembled closely that of professional physical educators; 51 percent rated the objective which matched their reason for course selection as "important" or "most important."

436. LINCOLN, Raymond G. A Study of the Relationship Between Physical Fitness and Grade Point Averages of Tenth-Grade Boys at Sammamish High School, 1964. M.S. in Physical Education. 1964. 56 p. (C. Peek)

The Washington State Physical Fitness Test Battery for Junior-Senior High School Boys was administered to 173 boys in grade 10. Their mean physical fitness scores and grade point averages correlated positively and significantly at the .05 level. The high and low grade point average groups differed significantly at the .05 level in physical fitness. The mean physical fitness of the total group matched that of the middle grade point average group.

437. MILLER, Susan Elizabeth. The Relative Effectiveness of High School Badminton Instruction When Given in Two Short Units and One Continuous Unit Involving the Same Total Time. M.S. in Physical Education. 1964. 117 p. (M. Broer)

High school girls (30) having 6 weeks of continuous instruction in badminton were compared with an equal group having two 3-week periods of instruction with 14 weeks between. Prior to instruction, the group with interrupted instruction was superior in both intelligence and motor ability but the groups were not significantly different on a wall volley test. After 3 weeks of instruction, the interrupted instruction group was significantly better on the wall volley and knowledge tests. The continuous instruction group improved significantly more during the second 3 weeks so that the differences between groups on the wall volley, short serve, and knowledge tests were not significantly different.

438. MULRONEY, Marilyn Georgene. Relationship of the Growth of American Red Cross Water Safety Education Programs to Population and Drownings in Selected Chapters in the State of Washington from 1957 through 1961. M.S. in Physical Education. 1964. 95 p. (M. R. Broer)

Data for the period 1957 through 1961 were collected by questionnaire from water safety directors in selected Red Cross chapters, directors of recreational swimming facilities, and county coroners' offices. Enrollment in swimming classes and the numbers passing various swimming levels increased more than the population in the selected areas. The number of drownings was relatively small and may have been influenced favorably by the increased instruction. The number of authorized instructors increased in the majority of chapters but many chapters used only a small percentage of those authorized.

439. OLPINSKI, Tadek W. An Analysis of the Intramural Sports Programs of the Junior and Senior High Schools in the Highline School District for the Year 1962-63. M.S. in Physical Education. 1964. 92 p. (L. Stevens)

Eight of twelve coordinators were physical education teachers and five considered a physical education major or minor essential. The majority had duties in addition to teaching, coaching, and administering the intramural program. Compensation varied for the coordinators and other teachers assisting in the program but averaged $100 per year. A wide variety of seasonal sports was offered. The majority of schools had corecreational programs and the coordinators supported the idea strongly. Three-quarters of the coordinators wanted to increase student participation. Three-quarters of the schools provided no awards. None of the schools required a medical examination for participation. Records were minimal but sufficient and only one school had a constitution. The majority had sufficient equipment but inadequate facilities.

440. PRENTISS, Gail. The Effect of a Progressive Program of Exercycle Exercise on the Cardiorespiratory Endurance and Anthropometric Measurements of Obese College Women. M.S. in Physical Education. 1964. 142 p. (M. R. Broer)
Harvard Step Tests, lung capacity, and selected anthropometric measures were taken on 21 obese college women before and after a voluntary 14-week exercise program including daily work on the Exercycle for 6 weeks. The Exercycle rides lasted 15 min. with progressively 3, 4, 5, 6, and 7 30-sec. work periods equally spaced during the ride. Heart rates were taken on an ECG in anticipation of the ride, 5 sec. before and after each work period, and each minute for 5 min. during recovery. Work during each work period and total work were recorded. The progressive exercise program on the Exercycle increased cardiorespiratory endurance and reduced hip and triceps fat. Changes occurred more rapidly at the beginning of the program and levelled off after 6 weeks.

441. SANDER, Carolyn Marie. The Development of Kinesthetic Awareness in the Nonpreferred Arm of College Women. M.S. in Physical Education. 1964. 264 p. (M. R. Broer)
The Miles ABC Test of Ocular Dominance, the Turner Test of Footedness, and an adaptation of the Van Riper Critical Angle Test of Handedness were administered initially to 28 women in a basketball class and 26 women in a volleyball class at the University of Washington, along with a lay-up or spike test to divide them into high and low skill groups. The tests of kinesthetic awareness given before and after experimental instruction were adaptations of Young's Grip Dynamometer, overhand and underhand throw-points, and Witte's Arm Raising Forward and Sideward. Between tests, the subjects had 5 min. of instruction and practice in either the lay-up or spike with the nonpreferred arm for 6 weeks (12 sessions). Kinesthetic awareness in the nonpreferred arm increased through practice with this arm. The increase was greater in subjects with low initial skill. Cross-lateral and unilateral hand and foot groups differed in their ability to increase the level of kinesthetic awareness in the nonpreferred arm.

442 SNYDER, John Jay. An Experiment Involving Proficiency in Performing Four Selected Physical Skills as a Basis for Predicting Basketball Playing Ability. M.S. in Physical Education. 1964. 65 p. (J. Torney, Jr.)
The four skill tests not requiring ball handling ability were given as a pretest. After 3 weeks instruction, the Johnson Basketball Ability Test was given and performance was scored during scrimmage. Correlations between the skill tests and Johnson Test were negative and correlations between the skill tests and scrimmage performance were low. The highest correlation (.526) was between the Johnson Test and scrimmage performance.

443. STEENSLAND, Douglas M. Preseason Training Methods Utilized by Selected Collegiate Coaches and Techniques Used by Successful

Collegiate High Jumpers. M. S. in Physical Education. 1964. 72 p. (C. A. Mills)
Questionnaires were sent to coaches of high jumpers in the 1962 NCAA finals. Running was the most popular preseason training and weight training was used extensively to develop leg strength. The majority of jumpers lengthened their last few strides while increasing speed, settled prior to take-off, and focused their eyes on or above the bar.

444. TURNBULL, Lawrence Myron. A Comparison of the Cardiorespiratory Changes as Determined by Treadmill Performance Occurring in Selected University of Washington Males Enrolled in Two Selected Physical Education Activities. M. S. in Physical Education. 1964. 117 p. (E. L. Hughes)
A handball and a physical conditioning class were equated after an initial three-phase treadmill test and retested after 10 weeks of class participation. Measurements of heart rate, ventilation, oxygen consumption, and work capacity were taken during the run. Both groups improved in cardiorespiratory fitness but the conditioning class showed slight superiority on the second test.

445. ZIEGER, Patricia Christine. Influence of Warm-Up, Running Surface, and Different Types of Obstacles on Performance of the Illinois Agility Run. M. S. in Physical Education. 1964. 88 p. (M. R. Broer)
Tests were run on 551 junior high school girls with one class from each grade running under each of five conditions. The control group ran on a gymnasium floor while wearing shoes, had no warm-up, and had chairs for obstacles. The experimental groups ran either on asphalt, with bare feet, after a 2-min. stationary run for warm-up, or with people as obstacles. The tennis shoes of the control and asphalt groups were rated as having a tread or being smooth. Analysis of variance showed that warm-up was detrimental; that bare feet, asphalt surface, and smooth soles were beneficial; and that using chairs or people had no effect on performance. Grade 7 students performed best under all conditions and students in grades 8 and 9 were progressively worse under four of the conditions but only 3 of 15 comparisons were significant. The interaction of grades with conditions was not significant.

University of Wisconsin, Madison, Wisconsin (J. G. Wolf)

446. BARRATT, Marcia A. A Survey of Dance Curricula in Selected Colleges and Universities with Recommended Guides for Dance Curricula Designs. M. S. in Physical Education (Dance). 1964. 88 p. (L. O. Kloepper)
The survey was based on questionnaire returns covering administrative procedures, course offerings and sequences, percentage of methods and content courses, and desirable electives. Dance curriculums in education lacked definition as to administration and requirements.

447. BARRETT, Kate R. An Analysis of Exploration as a Method for Teaching Movement. M. S in Physical Education. 1964. 100 p. (L. E. Halverson)
Guided progression, demonstration-observation, and evaluation were identified as the elements in exploration. Guided progression was subdivided into selection of material, construction of a movement problem, development of the problem, and development within and between problems. The comparison between demonstration as a model to be imitated and exploration as a basis for developing perceptive observation was emphasized. Rating scales for evaluating children's progress in solving

movement problems were studied.

448. BENSON, Carolyn R. A Factor Analysis of Tests of Balance, Kinesthesis, and Motor Patterns for Projecting an Object With and Without Vision. Ph. D. in Physical Education. 1964. 243 p. (M. R. Liba)
Data were collected from college women on 26 tests and correlated. The correlation matrix was summarized by two factoring procedures. Factors identified as "unilateral motor patterns (other than a kick) involving forceful projection of an object" and "body balance" were identified. Vision as a factor affecting motor performance appeared highly specific to the performance and measures of kinesthesis showed a high degree of specificity.

449. BLIEVERNIGHT, David L. Side Horse Leg Circles: A Cinematographic Analysis. M. S. in Physical Education. 1964. 180 p. (E. M. Mortimer)
Movies from the side, front, and overhead running at 64 frames per second were used in analyzing double leg circles on the side horse by seven performers. All performers exhibited the same basic movement pattern but the better performers spent a greater percentage of time on both hands and evidenced greater body extension.

450. BRAULT, Donald. A Comparison of the Performance of Elementary School Children on Kraus-Weber Test of Minimum Muscular Fitness with Achievement on Selected Motor Fitness Measures. M. S. in Physical Education. 1964. 109 p. (G. L. Rarick)
The 6-item Kraus-Weber Test was given to 233 boys and 233 girls aged 7, 9, 11, and 13 in six elementary schools in Milwaukee County together with pull-ups, timed sit-ups, dynamometer thrust and pull, baseball or softball throw, standing broad jump, 35- or 50-yd. dash, trunk flexion, trunk extension, and the short potato race. Treating data for the separate sex and age groups separately by chi square and analysis of variance showed that children who passed all of the Kraus-Weber test items performed significantly better than those who failed one or more on all performance tests except for the measures of running speed and the distance throw for 7-year-olds.

451. CHENEY, Gay E. Choreographic Process: A Creative Experience. M. S. in Physical Education (Dance). 1964. 192 p. (M. Fee)
The purpose of the study was to evaluate the hypothesis that "choreographic process was a practical progression of idea, movement, and form problems, the solutions of which culminate in the realization of a final art form. The problem solutions are evaluated in terms of their relationship to idea, movement, form, and aesthetic quality; the problems are motivated by implications of preceding problems for idea, movement, form, and aesthetic need." The philosophical implications of the study were that the most satisfactory approach to choreography involves the total experiencing of the choreographic process as developed in the hypothesis.

452. GREINER, Marilyn R. Construction of a Short Serve Test for Beginning Badminton Players. M. S. in Physical Education. 1964. 165 p. (M. R. Liba)
Developing the test involved determining reliability with and without the net, comparing floor targets varying in size and shape, and comparing scoring procedures. The subjects were 93 beginning badminton players who were senior high school girls. The floor target was adequate for beginning badminton players since 95 percent of the serves landed on

and were evenly distributed over the scoring area. The proposed tests proved more reliable than the French Short Serve Test and were valid measures of short serving ability.

453. HALSTEAD, Robert E. A Survey of a Rural Population and the Effect of Physical Education upon the Selection of Leisure Time Activities. M. S. in Physical Education. 1964. 78 p. (K. G. Stoedefalke)

Fifty male and fifty female subjects were randomly selected from the tax rolls of a southwestern Wisconsin County and interviewed. The interview followed a prepared questionnaire which included definitions of terms (physical education, leisure, extracurricular activities, intramurals, school activities) and covered physical education, athletic experience, and leisure time activities. The results indicated that little attention had been given to carry-over activities; intramural programs had been poorly organized or nonexistent; the physical education programs had limited scope and little variation; and the physical education curriculums had not met the needs of the population.

454. HAYS, Joan F. The Effect of Two Regulated Changes of Tempo upon the Emotional Commentation of a Specific Dance Study. M. S. in Physical Education (Dance). 1964. 144 p. (M. Fee)

Verbal associative responses obtained from control groups viewing a film of a dancer performing the same movement sequence at three different tempos were compared with experimental group responses after viewing a film performed at MM184 and projected at 18 (recorded speed), 12, and 6 frames per second. The effect of a change of tempo on a specific motion event series was apparent in the actual performance, in the filmed performance projected at different rates, and in the emotional connotations which the dance might attempt to communicate.

455. HEATH, Marcia S. The Visual Dynamics of Group Choreography. M. S. in Physical Education (Dance). 1964. 86 p. (L. O. Kloepper)

Principles based largely on the dynamics of visual perception were used to evolve philosophically certain principles of group choreography in order that the result appear as a unified and diversified whole. The conclusions were that perception of a dancer's movement was strongly affected by the relationship of the dancer to the stage space, that a delicate balance between the autonomy of the dancer and of the group must be maintained, and that this balance depended on tensional relatedness between the dancers of the group.

456. KLEINFELDT, Robert H. Relative Merits of Wood and Tile Gymnasium Floors. M. S. in Physical Education. 1964. 59 p. (G. S. Kenyon)

Five wooden and five tile floors were tested for foot comfort, rebound qualities, and traction. Foot comfort was measured as the diameter of the imprint of a basketball dropped from a standard height on a graphite-covered paper. Rebound quality was measured as the rebound of a basketball dropped from a standard height and as the maximum vertical jump height of the subject's hand photographed stroboscopically. Traction was measured with a special device as the force required to overcome floor friction. Test reliabilities ranged from .75 to .97. The significance of differences between and within floor types was tested with a hierarchical analysis of variance for each quality. Foot comfort was slightly greater on wood floors than on tile floors. Wood and tile floors did not differ significantly in rebound characteristics but some variability was found within each type. Traction was greater on wooden floors but varied considerably within each type of floor.

457. KOHN, Neil R. The Evolution of Offensive Football (1913-1963). M.S. in Physical Education. 1964. 123 p. (J. G. Wolf)
All available sources were reviewed critically, with particular attention to those at the National Football Hall of Fame in Davenport, Iowa. Football has progressed from the T formation of momentum football through the emphasis on punting of Yost's Michigan teams of the early 1900's, to the faster, open style introduced with the forward pass, the power and deception era introduced by Warner, the shifting attack of Stagg, Harper, and Rockne, and now back to the T with modern, streamlined embellishments.

458. QUANDT, Harlan. A Cinematographical Analysis of the Palm Ball Pitch Compared to the Fast Ball Pitch in Baseball. M.S. in Physical Education. 1964. 67 p. (K. G. Stoedefalke)
Motion pictures were taken from the back, side, and 45° to the left front of Warren Spahn during pregame warm-up. The pattern of joint action was similar in both deliveries except that wrist flexion in the fast ball delivery was twice that in the palm ball delivery. The velocity of the fast ball was 17.7 percent greater than that of the palm ball. Gripping the ball in the palm appeared to reduce the flexibility of the wrist and the velocity of the pitch.

459. STRASSER, Richard. An Elementary Physical Education Program for the Tomahawk School System. M.S. in Physical Education. 1964. 125 p. (L. E. Halverson)
The purpose of the study was to develop a curriculum in elementary physical education and a plan for effective implementation of such a program. The program was prepared based on review of the related literature and personal interviews with experts in the field.

460. TEMPLE, Ina G. A Study of the Recreational Competency of College Women Who Rate Themselves as Proficient in Selected Activities. M.S. in Physical Education. 1964. 96 p. (M. R. Liba)
Performance of college women who rated themselves as proficient in badminton, bowling, basketball, softball, tennis, and volleyball were compared with performances of college women who had completed a course of instruction at the University of Wisconsin. College women who rated themselves as proficient did not perform as well in any of the activities as women who had completed the instructional classes.

461. WEBER, Marie. A Comparison of Three Methods of Training on the Ability to Execute a Vertical Pull-Up. M.S. in Physical Education. 1964. 90 p. (L. E. Halverson)
Physical education and dance majors who could not chin (N = 36) were given a strength test and assigned randomly to an isometric training, isotonic training, instructed, or control group. All subjects except the control group trained twice a week for 6 weeks. Cable tensiometer strength, the number of successive pull-ups, and the elbow angle at which subjects failed were measured every 2 weeks. Trends were analyzed from group mean performance curves. The final pull-up and strength test data were subjected to an analysis of variance. Actual practice with instruction resulted in greater improvement than either strength building program. Strength measures were increased by strength building exercises and apparently by psychological and motor learning factors.

462. WHALEY, Russell F. A Study of Selected Aspects of Secondary School Health Programs in Five Rural Wisconsin Counties. Ph.D. in Adult Education-Health Education. 1964. 242 p.

(W. H. Southworth)
Health services of representative schools in five counties considered 100 percent rural were compared and the effect of four curriculum plans on pupil health knowledge, interests, and behavior was appraised. School health services in all five counties fell far below nationally recommended standards. Mean health knowledge of students in schools with an incidental curriculum or an integrated curriculum without a written plan for integration was significantly higher than for students in schools with direct health instruction or an integrated curriculum with a written plan. Pupils with direct health instruction had a significantly lower mean score than students having any other type of instruction. The integrated-with-written-plan type of instruction appeared superior to the other three in influencing pupil health interests. Reporting of health practices differed significantly between the four types of instruction and the integrated-with-written-plan type of instruction seemed slightly superior for influencing pupil health practices.

463. WHITE, Robert A. An Analysis of the Multimedia Instructional Laboratory as Used in the Teaching of Health Education to College Students. M.S. in Education (Health Education). 1964. 53 p. (W. H. Southworth)
Student responses to 12 questions concerning instruction in the Multimedia Instructional Laboratory were 75 percent favorable and 7 percent opposed. An objective pretest of knowledge concerning vision, vision testing, hearing, and hearing testing showed no significant difference between the MIL group and a group taught by the traditional lecture-demonstration method. The posttest mean differences for hearing and hearing testing were not significantly different but the lecture-demonstration was significantly higher on the posttests covering vision and vision testing. A follow-up, essay examination showed no statistical difference between groups.

464. WRIGGLESWORTH, Frank L. A Cinematographical Analysis of the Short Chip Shot in Golf. M.S. in Physical Education. 1964. 144 p. (J. G. Wolf)
Motion pictures were taken from two angles of 5 expert and 25 average golfers executing 10 chip shots at a rectangular target with each shot plotted as to landing and stopping position. Selected frames for each subject were analyzed in a Model P. E. 40 Recordak by measuring angular and rotary movements of body segments. Recommendations were developed from the analysis regarding the most efficient and effective stance at address, back swing, club-ball contact, and follow through.

University of Wyoming, Laramie, Wyoming (R. D. Watkins)

465. ROBY, James D. A Survey of Personal, Professional, and Social Qualities Used by Administrators in Rating Coaches and Academic Subject Teachers in Wyoming. M.A. in Health, Physical Education, and Recreation. 1964.
The personal, professional, and social qualities of coaches and academic teachers were compared with regard to their rating on each quality and their combined rating on all qualities. These categories were also presented in their rank order.

466. THELEN, Lora Lee. A Study of Various Aspects of Bowling by Women. M.A. in Health, Physical Education, and Recreation. 1964.
Factors influencing bowling by women were investigated with analysis of

variance and simple and multiple correlation. Significant correlations existed between grip strength, ball speed, and league average but none of the variables had any relationship to the type of delivery.

PERIODICALS REVIEWED

Acta Chirurgica Scandinavica
*Acta Medica Scandinavica
*Acta Orthopaedica Scandinavica
*Acta Paediatrica
*Acta Physiologica Scandinavica
*Acta Physiologica Polonica
*Aerospace Medicine
*American Heart Journal
American Journal of Anatomy
*American Journal of Cardiology
*American Journal of Clinical Nutrition
*American Journal of Human Genetics
American Journal of Hygiene
*American Journal of the Medical Sciences
American Journal of Medicine
American Journal of Orthopsychiatry
*American Journal of Physical Anthropology
*American Journal of Physical Medicine
*American Journal of Physiology
*American Journal of Psychiatry
*American Journal of Psychology
*American Journal of Public Health and the Nation's Health
*American Journal of Surgery
*American Review of Respiratory Diseases
*Anatomical Record
Annals of Applied Biology
*Annals of Human Genetics
*Annals of Internal Medicine
Annals of Physical Medicine
*Arbeitsphysiologie
*Archives of Environmental Health
*Archives of Internal Medicine
*Archives of Physical Medicine and Rehabilitation
Archives of Surgery
Australian Journal of Experimental Biology and Medical Science
*British Heart Journal
*British Journal of Industrial Medicine
*British Journal of Nutrition
*British Journal of Preventive and Social Medicine
British Journal of Psychiatry
*British Journal of Psychology
British Medical Bulletin
*British Medical Journal
Bulletin of the Johns Hopkins Hospital
*Bulletin of the Los Angeles Neurological Society
*California Clinician
California Journal of Educational Research
California Medicine
Camping Magazine
Canadian Journal of Pharmacology and Physiology
Canadian Journal of Psychology
*Canadian Journal of Public Health
Cancer Research
*Child Development
Circulation
*Circulation Research
Clinical Science
Danish Medical Bulletin
*Diabetes
Educational and Psychological Measurements
*Ergonomics
Experimental Cell Research
*Federal Aviation Agency Civil Aeromedical Research Institute
*Federal Aviation Agency Report
*Federation Proceedings
Genetic Psychology Monographs
Geriatrics
*Giornale Internazionali di Medicina dello Sport
*GP
*Growth
*Human Biology
Indian Journal of Medical Research
*Industrial Medicine and Surgery
International Journal of Health Education
Internationale Zeitschrift Fur Angewandte Physiologie
*Journal of Abnormal and Social Psychology

Periodicals marked with an asterisk have research reports listed in this issue of Completed Research.

*Journal of the American Dietetic Association
*Journal of the American Medical Association
Journal of Anatomy
*Journal of Applied Physiology
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